Journal of the

AMERICAN PHARMACEUTICAL ASSOCIATION

VOL. X. NO. 7
CONSECUTIVE NO. 13

Practical Pharmacy Edition

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JULY, 1949

TABLE OF CONTENTS

A. Ph. A. Officials and Administrative Staff..... 388
New Prescription Products..... 390
Straight from Headquarters..... 400
Symposium on Interprofessional Relations..... 402
Two Anhydrous Emulsifiable Solid-Mixtures for the Preparation of Hydrophilic Ointment Bases..... 410
What's Happening in the Medical Care Field..... 415
A New Design for a Mortar and Pestle..... 420
Simplified Prescription Pricing..... 422
The 27th Remington Medalist..... 428
Cetyl Alcohol Combinations as Suspending Agents in Lotions..... 430
The Public's Health—Your First Concern, XIII; Suspecting Cancer..... 432
Science News Capsules..... 433
Briefly Noted..... 434
Plant Science Seminar..... 436
A. Ph. A. Mission to Japan..... 437
A. Ph. A. Branches..... 438
Accepted Dental Remedies..... 440
Prescription Information Service..... 442
New A. Ph. A. Members..... 443
Typical Days..... 445
New and Nonofficial Remedies..... 447
Monthly Drug and Advertising Indexes..... 448

Convention Resolutions

Space limitations make it impossible to publish the full text of the Resolutions presented at the Jacksonville Convention in this issue. The Resolutions will appear in the August issue.

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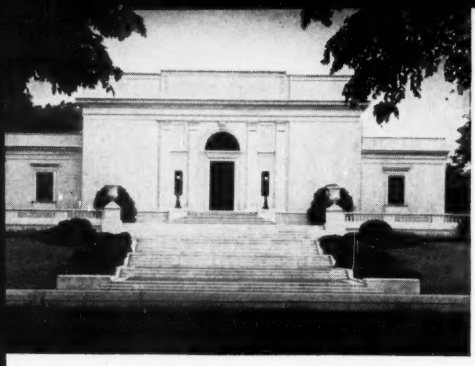

STRAIGHT FROM HEADQUARTERS

By ***ROBERT P. FISCHELIS,*** Secretary
AMERICAN PHARMACEUTICAL ASSOCIATION

Clarification?

THE "Findings and Recommendations of the Pharmaceutical Survey" include the following recommendations under "The Pharmaceutical Curriculum":

"It is recommended that the American Association of Colleges of Pharmacy and the American Council on Pharmaceutical Education continue their efforts for the constructive betterment of the existing four-year program of education and training providing the essential knowledge and skills for the practice of pharmacy and leading to the degree of Bachelor of Science in Pharmacy.

"It is recommended that the American Association of Colleges of Pharmacy and the American Council on Pharmaceutical Education take the necessary initial steps for the development and establishment of a six-year program of education and training leading to the professional degree of Doctor of Pharmacy (Phar.D.). this program to include two or more years of general education and basic science training."

In his presidential address at the Jacksonville Convention, Dr. Ernest Little commented as follows regarding these recommendations:

"It would prove helpful if the Committee would furnish an official interpretation of its recommendations relative to the four-year course and the six-year program.

"There is no question but what a considerable amount of uncertainty exists as to the intent of the Committee relative to these two programs.

"The recommendation relative to the continued betterment of the existing four-year program refers to it as providing the essential knowledge and skills for the practice of pharmacy. This would indicate that the Committee considers the four-year Bachelor of Science program adequate for the practice of retail pharmacy.

"This idea is not entirely in harmony with some of the statements made under the heading, 'The Summary of the Evidence,' preceding the recommendations themselves and quite contrary to the conclusions of the Assistant Director of the Survey in charge of curriculum studies, as brought out in his report to the A. A. C. P. last August in San Francisco. It is also contrary to the recommendations of the Committee on Curriculum of the A. A. C. P. which has worked very closely with Dr. Blauch on this phase of the Survey Committee's work, and which made very definite and far-reaching recommendations in its report before the A. A. C. P. yesterday afternoon.

"The Director of the Survey has, on occasion, made the statement that the four-year course is adequate for 90 per cent of the graduates of our colleges of pharmacy and that the six-year program is needed only for those few students who wish to enter the manufacturing field, research laboratories, hospital pharmacy, strictly professional pharmacies and perhaps some few other specialized fields.

"Others feel, and I am inclined to agree with them, that students planning on entering the field of pharmaceutical manufacturing, scientific research, etc., should enroll in our now-existing graduate programs and earn the Doctor of Philosophy degree rather than the professional degree of Doctor of Pharmacy.

"They contend that if the six-year program is not needed by the practitioners of retail pharmacy the need for such a program is not sufficient to warrant its establishment at this time or in the near future. Again, I am inclined to agree with this viewpoint.

"The above statements are not presented as arguments either for or against the six-year program. They are intended to establish the need of clarification on the part of the Survey Committee of one of its most important recommendations.

"Those of us who believe in the work of the Survey Committee and are eager to support it in every proper way are a bit confused relative to this recommendation. We find also that discussions

with individual members of the Survey Committee have served only to add to this confusion rather than to clarify the point at issue.

"Inasmuch as the recommendation involved constitutes what is possibly the most important recommendation resulting from the Survey, it should be made implicitly clear, even though an additional meeting of the Survey Committee may prove necessary to accomplish that end."

President Little, at the conclusion of his address offered the following resolution:

"Resolved, that Dr. Edward C. Elliott and the members of the Survey Committee be requested to clarify the intent of their recommendations relative to the four-year course and the six-year program as they apply to our educational program, both of today and for the years immediately ahead."

This resolution was adopted by the House of Delegates and forwarded to the Committee on the Pharmaceutical Survey. The Committee held a meeting in Washington on June 30 and July 1, at which time the A. PH. A. resolution was given consideration and the following explanatory statement was adopted:

"The Committee on the Pharmaceutical Survey by Recommendation No. 2 intends to endorse the continuance of the existing four-year plan of pharmaceutical education and training, based upon the selective admission of students directly from high school, as the minimum mandatory training necessary for the practice of pharmacy.

"At the same time, in Recommendation No. 3, the Committee takes account of the rapid development of the health sciences, and the definite current trend for the extension of the general education of American youth to include two years of instruction beyond the secondary school, thereby affording new opportunities for raising the level of preparation for the professional areas of pharmacy. The intention of Recommendation No. 3 is to urge colleges and schools of pharmacy, adequately staffed and financed and favorably located, to develop higher forms of professional preparation based upon two or more years of general education and basic science training on a collegiate level."

A Suggestion to Inspectors

SOMETIMES inspectors of boards of pharmacy or boards of health or representatives of the Food and Drug Administration who visit pharmacies for the purpose of checking certain phases of law enforcement can render a real service to the public as well as to pharmacists by offering suggestions based on their many contacts with the public and with the profession.

It was recently pointed out that an inspector in the course of his regular duties suggested to pharmacists that they dispose of accumulations of old proprietary remedies which are no longer advertised because of legal restrictions. Important among these products are certain venereal disease remedies which date back to an earlier generation and which some pharmacists hardly know they have on their shelves because they were there when they bought their establishments from previous owners.

Pharmacists themselves would do well at inventory time to throw out old remedies which clutter shelves and which do no credit to the profession, if sold.

We might as well make up our minds that under the present food, drug and cosmetic act the day of the extravagantly advertised remedies is over and the sooner the last remaining packages of such products are removed, the better. Let us proceed to clear our shelves at once of all products that do not comply with current federal and state food, drug and cosmetic acts, pharmacy acts and other progressive laws.

Atlantic City Next

PREPARATIONS are already under way for the next annual convention of the AMERICAN PHARMACEUTICAL ASSOCIATION. The Council has set the week of April 30 to May 6, 1950, for the meetings of the A. PH. A. and its Sections, and the affiliated and related organizations. The meeting will be held in Atlantic City, N. J., with the Hotel Traymore as headquarters. This meeting will be followed immediately by the decennial meeting of the U. S. Pharmacopoeial Convention at Washington, D. C.

It has been the custom for the AMERICAN PHARMACEUTICAL ASSOCIATION to arrange its annual conventions in the year of the decennial U. S. P. meeting to facilitate the travel of those who attend both meetings and so a city close to Washington, and, on occasions, Washington itself, has been selected as the convention city.

Meetings of the AMERICAN PHARMACEUTICAL ASSOCIATION and its affiliated and related groups are becoming so large and require so much meeting space for the

(Continued on Page 419)

SYMPOSIUM ON INTERPROFESSIONAL RELATIONS

Organization of the Bureau of Professional Relations

by ***PERRY A. FOOTE****

CONSIDERABLE attention has been placed, in recent years, upon the importance of retail pharmacists maintaining their professional standing and prestige both with the consumer and in particular with the medical profession. Changing trends in therapy and in the merchandising of prescription products have made it necessary that the retail pharmacist re-establish himself, in the eyes of the consumer and medical profession, as a necessary factor in the protection of public health. In Florida an organized effort has been made in this direction, commonly described as "professional relations." Through the Bureau of Professional Relations of the University of Florida College of Pharmacy this effort has been directed toward every physician and pharmacist in the State.

The Florida State Legislature of 1939 passed a bill which increased renewal fees for pharmacy licenses from one to five dollars per year. This law specifies that the increase shall be used for the advancement of the art and science of pharmacy in Florida. The Florida State Board of Pharmacy conceived the idea that the greatest good to all would result from a program of professional

* Dean, College of Pharmacy, and Director of the Bureau of Professional Relations, University of Florida, Gainesville.

(*Continued on Page 404*)

Program and Activities of the Bureau of Professional Relations

by ***LEE W. HARRELL****†

IT WOULD indeed be difficult to explain all of the phases of our program in detail in the short space allotted this paper. Rather, I shall attempt to present to you a brief outline of our program and activities. As a matter of fact, when considering the more minute details of a promotional program, the individual personalities and particular characteristics of those involved will necessarily have to be considered. In addition, there are such things as the make-up and individuality of communities and many other factors too numerous to mention here that will influence, at least to some extent, the activities of a program of this sort.

First consideration must be given to the aims and objectives of the program. Just what do we hope to accomplish? We have as our objectives the following:

1. To promote a better understanding between the physician and the pharmacist.
2. To promote better ethical pharmaceutical practices.
3. To increase interest in the official chemicals and drugs of the U. S. P. and N. F., which will ma-

† Associate Director, Bureau of Professional Relations, College of Pharmacy, University of Florida, Gainesville.

(*Continued on Page 404*)

PRESENTED AT A. Ph. A.'s JACKSONVILLE CONVENTION

Interprofessional Relations - - - the Physicians' Viewpoint

by ***CLAUDE L. CARTER****

I THINK it is an excellent idea to have a physician take part in this symposium. Too often we are omitted from discussions such as this . . . . Nevertheless, we are, and always will be interested in anything that affects the welfare of our patients or the welfare of the medical and allied health professions. I have been intensely interested in the program of the Bureau of Professional Relations from the very start. Although I was not a member of the original committee of physicians who helped to organize the Florida Formulary, nor have I since been affiliated with the Bureau in an official capacity, I can safely say that I was one of the first to follow through and write prescriptions for Florida Formulary preparations. As a result of my early experience with the Bureau, I remain one hundred per cent in favor of this worthy cause.

I am not attempting to pass the buck, but I am firmly convinced that there is a greater percentage of physicians who are anxious to cooperate with the Bureau than there are pharmacists who are willing to tie in one hundred per cent with the program. I base this statement on personal experience and

* Jacksonville, Fla., physician.

(*Continued on Page 407*)

Interprofessional Relations - - - the Pharmacists' Viewpoint

by ***DONALD S. EVANS****

I AM grateful for this opportunity to present the pharmacists' viewpoint on interprofessional relations, although my impressions will necessarily be those gained from my observation of the operation of our own Bureau. I realize that there are some pharmacists in Florida, as well as in other States, who are content to sit back and let the other fellow carry the ball for them. This will probably hold true in every profession. However, as a member of the Advisory Committee of the Board of Pharmacy, perhaps I have been in a position to observe the function of the Bureau better than some pharmacists. I feel that I can safely state that better than 75 per cent of our pharmacists are cooperating to some degree with the program of our Bureau. Our hope, of course, is to raise this figure to 100 per cent full cooperation on the part of every pharmacist. As more pharmacists cooperate, the benefits derived by those already participating will be increasingly enhanced.

I am firmly convinced that a great majority of the pharmacists, store owners and employee pharmacists alike, are becoming more and more interested in the future of

† Proprietor, San Juan Pharmacy, Orlando, Fla.

(*Continued on Page 408*)

ORGANIZATION OF THE BUREAU

(*Continued from Page 402*)

relations financed from this fund. Accordingly a Bureau of Professional Relations was established July 1, 1940, in the School of Pharmacy of the University of Florida by contract agreement between the Florida State Board of Pharmacy and the Board of Control of the University of Florida. This original contract called for the establishment of a fund known as the Florida State Board of Pharmacy, Bureau of Professional Relations Account, to which the State Board has contributed $5000 annually. In 1947 this contract was revised whereby the Board of Control and the State Board of Pharmacy would each contribute $5000 annually. During this more or less inflationary period, $10,000 is considered the minimum necessary for efficient operation of the Bureau. It is important to note that immediately after the organization of the Bureau, steps were taken which led to the official approval of the Bureau by the Florida Medical Association, Inc., and the Florida State Pharmaceutical Association.

During the war years, with restrictions on travel, limited supplies, limited personnel and the like, it was necessary to curtail some of the important aspects of the program including the personal detailing by our Associate Director. Since we were relying solely upon our mailings to keep the program going, we devoted more time and money to better art work in our pamphlets and bulletins. We have since recognized the value of color and design, and it has become a regular feature of our mailings.

On September 1, 1947, we again employed a full-time Associate Director, whose duties will be described later. Our Bureau again began to operate on a full-time basis and I believe that the results obtained have justified the confidence placed in it at the time of its organization.

I have seen our Bureau grow from an idea into a leader in the field of professional relations. In this time, I have also witnessed attempts by some States to promote similar programs, fail. I do not flatter myself to the extent of pretending to know why some programs have failed while some have achieved at least a reasonable success. Our program has been in successful operation for almost nine years. We do not offer it as the only workable program nor as a panacea. Our hope is that interested pharmacists from States who do not have such a plan in operation will gain something from this symposium which will help them in the organization and operation of a similar program.

I might add for the benefit of the pharmaceutical educators that this has not been a one-sided arrangement. Our College of Pharmacy has benefited both directly and indirectly as a result of the program of the Bureau. We are perhaps closer to the practicing members of our profession than any school or college on our campus as a result of the operation of the Bureau...

PROGRAM AND ACTIVITIES OF THE BUREAU

(*Continued from Page 402*)

terially reduce the cost of prescriptions.

4. To encourage rational prescription writing.
5. To discourage self-medication and mass medication.
6. To discourage counter-prescribing by pharmacists.
7. To discourage the use of higher-priced drug equivalents.
8. To discourage unnecessary dispensing and the use of samples by physicians.

You will note that all of our objectives are both definite and positive. None of them say what we are going to refrain from doing or what we hope not to accomplish. We hope to increase interest in official drugs and chemicals, and at the same time we hope to discourage the use of higher priced proprietary equivalents. It is significant that we say proprietary equivalents, for we must recognize that there are many fine proprietaries on the market today with a tremendous amount of research behind them. We may as well realize also that most proprietaries marketed today are backed by almost unlimited resources with which to promote them.

It would be folly for us to assume that the drugstore could hope to compete with the large proprietary manufacturer in facilities for research, manufacturing, or financing. Many of our ethical proprietary manufacturers are in a large measure responsible for the rapid progress of pharmacy and medicine in recent years. They have contributed much to the advancement of these professions. Nevertheless, for the sake of the

future of pharmacy and medicine, something must be done to curtail the multiplicity and duplication of some of the more elementary proprietaries. We feel that there are numerous instances in which official drugs and chemicals could be compounded by the pharmacist at much less cost to the patient. This would also result in a material reduction of inventory in most prescription departments. It must not be assumed, however, that we are engaged solely in a U. S. P. and N. F. propaganda campaign.

A thorough discussion of all of our objectives is obviously impossible, but the reasons behind all of them will be apparent to most pharmacists and physicians. Only recently the *Journal of the American Medical Association* carried an editorial deploring the naming and duplication of the penicillin preparations. It might have included vitamin, estrogen, and many other preparations as well. The editorial appeared in the July 17, 1948, issue, and I recommend it as both amusing and enlightening.

Promotional Activity Necessary

After our objectives have been determined, we then must plan what I choose to term as an intensive, effective sales promotion program. It goes without saying that if the leaders and organizers are not completely and thoroughly sold on the program, it is foredoomed.

Likewise the degree of success of the program will be in direct proportion to the degree to which the pharmacists and physicians are sold on the program. After all, good professional relations must begin with and be carried on by the individual. I attribute the lethargy of some pharmacists primarily to a poor selling job on the part of the Bureau.

A good propaganda campaign can be conducted by mail. One may be able to promote specific formulas and preparations by mail. But when it comes to the task of selling the medical profession on the knowledge, character, personality, ethics, and ability of the individual pharmacist, only the pharmacists themselves are capable of portraying a complete and accurate picture. For this reason we place great emphasis on the follow-up and personal detailing of the physician by the individual pharmacist.

It is significant to note that we actively cooperate only with the M.D.'s for obvious reasons, although we are aware that chiropractors, naturopaths, and osteopathic physicians are writing more and more prescriptions, which amount to more and more business for the pharmacist. However, the Florida Medical Association not only has approved and endorsed our program, but has appointed an Interrelationship Committee for the purpose of working with the Bureau. We are aware of the fact that a similar program with the dentists would add materially to a program of this sort, and we hope some day to publish a dental formulary, and include the dentists in our program.

Program Has Several Phases

The actual program now in operation is divided into several phases. We have an exhibit which we display at the various State medical and pharmaceutical meetings, short courses, and conventions. From this exhibit we distribute our literature, formularies, and samples. Of course, I am present at these meetings to discuss the program with interested parties.

Our promotion by mail consists of ten monthly mailings to all physicians and drugstores in our State. We do not mail these in July and August. Included in these mailings is a bulletin on some timely subject of interest to both professions. Occasionally a bulletin is designed to support one of our Florida Formulary preparations, but we are always careful to give the references. Included also, as an enclosure, is a pamphlet or a blotter concerning a Florida Formulary preparation. Last year we mailed over 125,000 pieces of literature to Florida physicians and pharmacists.

In addition, we send to the drugstores, follow-up cards on F. F. preparations, which they in turn mail to the physicians in their community or locality, after placing their store name on them. This gives the physician the opportunity of determining which drugstores are interested and also tells him where he may be certain to obtain the particular preparation. We have found that art work and design are important in this literature. Occasionally we may include also a survey in these mailings. We have made a book of the returned cards from our most recent survey which is on display in our exhibit.

There is also a great deal of personal corre-

spondence that must be taken care of. We have a part-time secretary who is kept quite busy answering requests for literature, etc. Of course, we are obliged to do some research work, both in the laboratory and the library, in order to answer some of the inquiries. We attempt to answer any and all questions, and in this manner we are serving more or less in the capacity of an extension school.

Florida Formulary

Our Accepted Florida Formulary is used as a basis from which we have attempted to build a correlated program of promotion designed to present this Formulary to every physician and pharmacist in the State. This formulary is composed of 3 × 5 cards contained in a steel file box and indexed according to the therapeutic use of the formula printed thereon. We have a few "specialties" to which we have given titles such as "Elixir Thiaglycine Compound, F. F.," but we stress the fact that these prescriptions are presented primarily as guides to be used by the physician in designing his prescriptions. Nevertheless, some of these formulas are being prescribed quite extensively by name only. The bulk of the formulary is made up of proved U. S. P. and N. F. prescriptions, revised in line with modern therapeutic trends. We have been unable to reissue the original formulary so we have distributed a Florida Formulary Supplement which contains the more popular formulas. Since the fall into disrepute of the sulfa drugs for local application, even this is in need of revision. With the Florida Formulary as a basis we have an organized program for detailing the physicians, which is divided into two phases: detailing by the Associate Director, or detailing by the Bureau, and detailing by the individual pharmacist.

Detailing Is Valuable

Detailing by the Bureau is valuable as it approaches the physician from an educational angle. It serves to explain the purpose of the program without the hint of expected financial return. It may even accomplish the feat of selling the physician on one or two F. F. preparations, but our experience has shown that in general it does not create very many prescriptions. One visit per year is not enough to change the prescription-writing habits of a physician. The follow-up detailing by the individual pharmacist, it has been found, will create prescriptions for the pharmacist. Of course, physicians in a certain community will have to be screened. Too much emphasis is not placed on radiologists, pathologists, and the like as they write very few prescriptions. In addition, the physicians should be detailed according to their specialties. We have found that much greater success will be obtained from the detailing of young physicians, who have not yet become set in their habits.

It is, therefore, important that the pharmacist detail a new physician in his community without waiting for the annual visit of the Associate Director of the Bureau. We suggest that the pharmacist detail one or two Florida Formulary preparations, never more than two, to his physician. The use of a fair-sized sample is sometimes helpful. This will give the physician the opportunity to see what his prescription will look like when filled by that particular pharmacist, which he cannot determine when observing samples made up by the Bureau. Perhaps the most significant aspect of the program to the individual pharmacist is that it paves the way for the pharmacist to make a professional call on his physicians and thereby establish himself in their eyes as a pharmacist in the true sense of the word.

Results Vary by Communities

Wide variations in results have been noted in different communities, and in some instances, in the same community, with the same effort from the Bureau, implying that success depends largely on the individual initiative and resourcefulness of the local pharmacist. To use an old, rather trite expression, we have found that the individual pharmacist gets out of this program just about what he puts into it.

In our program we have found that good results are dependent upon carefully written bulletins in a constant program, earnest cooperation of the individual pharmacist, groundwork laid by personal detailing of the Bureau, and the use of follow-up cards.

Should there be any pharmacists to whom the financial aspects of such a program are not immediately apparent, permit me to cite the following example (see next page).

Elixir Ferrous Sulfate, F. F. will average on prescription, per pint	$2.00
Average cost per pint	.19*
Average gross profit	$1.81

Comparing this to a well known ferrous sulfate specialty:

Average cost to the patient on prescription, per pint	$3.25
Average cost per pint	1.63
Average gross profit	$1.62

When Elixir Ferrous Sulfate, F. F. is prescribed, the patient pays $1.25 less for the same medication. The pharmacist makes a profit of $1.81 compared to $1.62 and a percentage profit of over 90% compared to 50%. The difference in inventory necessary to fill these prescriptions is obvious. The pharmacist is also making use of some of the talent for which he was specifically trained, instead of merely scraping labels.

We are convinced that a program of this kind offers pharmacy a bulwark against the unethical encroachment of proprietaries. It offers the individual pharmacist an opportunity to advance his professional standing. It will, if earnestly promoted, establish better physician-pharmacist relationships. It tends to lower the high cost of medicine. It will promote individualized prescriptions, in lieu of ready-made proprietaries, designed only for the masses, which tend to increase the practice of self-medication. By constant promotion of high standards of ethics of pharmaceutical practice, a program of this kind cannot help but contribute materially to the advancement of the great profession of pharmacy.

THE PHYSICIANS' VIEWPOINT

(*Continued from Page 403*)

on similar experiences of other physicians with whom I have discussed this program. I have on occasion prescribed a particular F. F. formula only to have the pharmacist call my office by telephone and ask what "F. F." meant or request the name of the manufacturer. I admit that this was in the early stages of the program. However, I knew at the time that every drugstore in Florida had received mailings from the Bureau. This was a sign to me that the particular pharmacist was not eager to advance his own profession.

Occasionally, a pharmacist will phone to ask if he might substitute some ready-made proprietary since it is a lot of trouble to him to have to make up these Florida Formulary preparations. Can these pharmacists really be interested in the professional side of their business? Can a physician, with the welfare of his patient in mind, conscientiously direct his patients to a pharmacist who doesn't desire to devote any more time than is absolutely necessary to the compounding of prescriptions? I personally do not think it is a physician's rightful prerogative to tell the patient where to take his prescriptions. On the other hand, I believe it is his duty to see that they are filled at a pharmacy where they will get proper professional attention.

Expect Professional Service

A physician has a right to expect professional treatment of his prescriptions on the part of pharmacists, since the patient will look to him, and not to the pharmacist, for results from the medicine. I hope to see the day when all pharmacists and physicians will recognize the value of the Bureau of Professional Relations plan. Please don't misconstrue the foregoing in any way to conclude that all pharmacists are unprofessional. By and large, most pharmacists whom I have had the pleasure of knowing socially and professionally are high-type men and are intensely interested in their profession. The instances cited are isolated ones but will serve to point out the amount of good that can be undone by only a very small minority of pharmacists who do not care to join in an organized plan to benefit his own as well as allied professions. So much for the individual pharmacist from a physician's viewpoint.

As for physicians, I firmly believe that every physician desires to strengthen the professional bond and to create a better mutual understanding between physician and pharmacist. I think that it would be mutually beneficial for all ethical health professions to join hands professionally. This might also be advantageous politically, since any legislation affecting one profession will surely have some degree of effect in the same direction upon the others. I am convinced that any legislation harmful to one will eventually prove harmful to all. While I am on

* This is not a true elixir since it contains no alcohol, thus accounting for the low cost. This preparation is identical with Ferrous Sulfate Syrup, N. F. VIII.

this subject, it has become apparent that one of the major factors causing the public to consider the socialization of medicine is the high cost of medical care today. This includes the relatively high cost of medicine as compared with a few years ago. The program of the Bureau of Professional Relations is designed to, at least in part, remedy this through the promotion of lower-cost medicine in lieu of higher-priced proprietary equivalents.

Danger of Self-Medication

From limited sources available to me, I find that less than 30 per cent of the medicine consumed today is directed by the physician. This indicates that over 70 per cent is self-medication, or taken on the advice of a friend or relative. It is unnecessary for me to stress the implications of these figures to you. A tremendous amount of money is uselessly expended annually in this manner, usually by ill-informed people in low-income brackets who cannot afford to throw money to the winds. The greatest danger of self-medication, however, lies in the health hazards involved.

By helping to reduce the cost of medical care through the promotion of U. S. P. and N. F. lower-cost medicine, when feasible, and by cooperating with physicians to help reduce self-medication, the Bureau of Professional Relations is indirectly encouraging the patient to seek medical care when needed, instead of trying all of the quack remedies on the market and finally reaching the physician, but too late to avoid an expense greater than he would have had in the first instance. Both physicians and pharmacists who are interested in the welfare of their patients cannot fail to see the value of this type of promotion.

When a pharmacist complains of the multiplicity and duplication of proprietaries, he should consider the plight of the harassed physician confronted with the problem of remembering all of these catch-phrase names and with the responsibility of choosing one that will most nearly give him the desired results. The practice of endowing almost every item with a fanciful brand name is not merely a subject of ridicule, it has long since reached the point of outright absurdity and has aroused the active resentment of physicians everywhere. We more than welcome a program that tends to relieve this situation.

I do not desire to imply that there are not some excellent remedies on the market made by manufacturers which could not be duplicated by the retail pharmacy. In the final analysis it is the patient whose welfare must be considered. I feel, however, that every patient likes to be treated as an individual, and therefore, where possible, I like to design medicine to take that difference into account. Every case of measles, for instance, is a little different from the other cases, chiefly because no two patients are exactly alike. This difference can only be taken into account when individualized and not prefabricated medicine is employed. The Florida Formulary offers excellent prescriptions to be used as a guide by physicians who desire to design individual prescriptions.

I feel that as more and more physicians and pharmacists come to understand the program of the Bureau and its aims and objects, the benefits accruing to both professions will be increased. I believe that the Bureau is doing an excellent job and I trust that the day will come when pharmacy and medicine will be cooperating on a national scale to the everlasting benefit of all of the great ethical health professions.

THE PHARMACISTS' VIEWPOINT

(Continued from Page 403)

their profession. We are beginning to realize that if pharmacy is to maintain its identity as a profession, then we, the pharmacists, must be the ones to act. Actually, we have only one claim to professionalism. When we cease to compound medicines in small individual units according to the directions of a competent physician, then we have no right to class ourselves as professional men and women. We have witnessed in the past few years a well-financed, calculated, propagandizing of the physician on the part of some proprietary manufacturers, which tends to usurp our rightful heritage. Thanks to the Bureau of Professional Relations and the farsighted men who organized this program, Florida pharmacists do not have to sit idly by and be swept up by this wave of commercialism.

I can testify that a minimum of effort on the part of pharmacists in cooperation with a program such as ours will more than repay

them. They stand to gain in professional stature in the eyes of the people of the community in which they serve, and in the eyes of the physicians with whom they are serving. Physicians and patients will surely place more confidence in a pharmacist who manifests outward pride in his own profession, and an interest in allied professions. In addition, although financial gain should not be the prime objective, it will inevitably follow, both directly and indirectly, as the result of the pharmacists' participation in the program.

Certainly some pharmacists stand to gain more from a promotion of this kind than others. The location of his business establishment within the community, the size of the community, wealth of the community, and many other factors will have a bearing on the extent of the benefits derived. However, as has been pointed out, I cannot conceive of a condition wherein a pharmacist would not benefit, at least to some degree, as a result of his cooperating with the program. I am also firmly convinced that the pharmacist's own individual effort and initiative will be the deciding factor in determining to what extent he will benefit.

Physicians Cooperate

I have seen the attitude of physicians toward pharmacy change from that of mild tolerance to that of active and enthusiastic cooperation as a result of the pharmacists' participation in the Bureau's program. The pharmacist who exhibits to the physician an interest in both professions, by offering to cooperate with him, and by offering the program of the Bureau as a means of attaining some of their mutual objectives, will soon find the physician calling on him for many other services.

Moderate participation in our program will cost the pharmacist nothing. If he desires to use the follow-up cards, he will necessarily have to provide stamps for these. But I find that the best results are obtained by personal contact, following up the mailings of the Bureau with personal detailing of the physicians. If a store owner finds himself too busy, the next best move would be to send one of his employee pharmacists to detail the doctors on one or two of the F. F. formulas. This detailing can be supplemented by telephone and at odd meetings where the pharmacist may chance to see the physicians, such as on the golf course, at civic club meetings and the like.

One of the principal advantages of this program is the opportunity that it affords the individual pharmacist to talk to his physicians on a professional plane concerning conditions affecting both medicine and pharmacy. This in itself will in the long run more than repay the pharmacist for his trouble.

Eliminating Duplication of Drugs

As a result of detailing his physicians, the pharmacist will notice that he begins to spend more and more of his time in the prescription department compounding prescriptions and less and less of his time in scraping labels and counting pills.

As has been brought out here, the pharmacist cannot hope to compete with the ethical pharmaceutical manufacturer, nor does he desire to do so. On the other hand, in the fields where the tremendous and absolutely unnecessary duplication of items occurs, the average pharmacist will find that by promoting one Florida Formulary preparation successfully to his physicians, he will be able to eliminate a large number of these duplications, thereby cutting down his investment in items which eventually form a greater part of his dead stock. In addition, he is in a position to pass a considerable saving on to his customers in the form of lower-cost prescriptions. The greatest personal satisfaction, however, should come to him as a result of the knowledge that he is devoting more time to the task for which he was specifically educated and trained. I do not own a prescription shop, and therefore I can testify that the owners of conventional-type drugstores stand to gain just as much proportionately.

The art and science of pharmacy have indeed been advanced in our State as a result of the program of the Bureau of Professional Relations. Thousands of dollars have been saved our health-seeking customers, and, above all, individual pharmacists are awakening and making an effort to regain their rightful place among the health professions.

The Bureau of Professional Relations of the College of Pharmacy is rendering a sorely needed and timely service to phar-

(Continued on Page 448)

Two Anhydrous Emulsifiable Solid-Mixtures for the Preparation of Hydrophilic Ointment Bases*

by VISHNU N. BHATIA and LOUIS C. ZOPF

INTRODUCTION

THE vehicles for therapeutic agents used in dermatology usually constitute the major portion of the pharmaceutical preparation and, therefore, may influence the efficacy of the incorporated medicinal substances. This is especially true of the more solid preparations, such as ointments, wherein the therapeutic agent rarely exceeds 10% of the finished product. Ointments, because of their physical form and extensive usage, are products of major importance and interest, and in their preparation the nature and properties of the base must be given careful consideration.

Functions of an Ointment Base

Among the numerous functions and effects of an ointment base, the following constitute those of major importance:[1]

1. The base of an ointment largely determines its physical properties (consistency, adhesiveness, texture, sheen), keeping qualities, and heat stability.
2. The ointment base serves as a vehicle for applying and keeping drugs in contact with the skin. To be most efficacious in this respect, a base should have a semisolid consistency. It should also possess a cohesive plasticity so that drugs may be readily incorporated.
3. Ointment bases influence the penetration of drugs through the skin. Sulzberger and Wolf[2] have stated that to cause good penetration a base should (*a*) remove, dissolve, or disarrange the horny layer of the skin, and (*b*) dissolve or mix freely with the protective sebum, or in any way render the protective surface colloidal film less impermeable. The degree to which an ointment base will influence penetration depends on its constituents. Eller and Wolf[3] have shown that animal fats penetrate farthest into the skin, vegetable fats next, and mineral fats least. In addition, liquid fats show greater penetration than solid fats.
4. Ointment bases also serve as emollients and protectives to the skin. To satisfy this property the ingredients used in their preparation should have a low sensitization index and should not be irritating to the skin (unless such an effect is specifically desired as in the case of rubifacient ointments).
5. Since ointments form a coating over the skin, they reduce evaporation from the skin. Consequently, it is often desirable for an ointment base to be miscible with water, so that it may absorb any sweat occurring under the ointment film. This would prevent any accumulation of sweat under the ointment

* A study conducted at the College of Pharmacy, State University of Iowa, Iowa City. Presented before the Practical Pharmacy Section, AMERICAN PHARMACEUTICAL ASSOCIATION, Jacksonville, Fla., April, 1949.

film as is often experienced with ointments containing a large amount of oleaginous materials.

Hydrophilic Bases

During the past decade, evidence has accumulated to show that the hydrophilic ointment bases can best satisfy these requirements. The properties and advantages of hydrophilic bases are:

1. They are usually oil-in-water emulsions. Consequently, they are nongreasy and washable with water.
2. Their consistency is in a large measure dependent on their water content, which can be varied as desired.
3. By buffering, the *p*H of hydrophilic bases can easily be adjusted to that of the skin secretions.
4. They have a high index of compatibility with most of the drugs used in ointment formulations.
5. They are essentially heat stable.
6. Therapeutic agents incorporated in these bases show greater penetration through the skin.
7. Antiseptic ointments made from hydrophilic bases have a stronger antibacterial action due to the greater diffusibility of the active ingredients from these bases.[4]

Hydrophilic bases are gradually replacing the older oleaginous or hydrophobic vehicles. They are now included in the Pharmacopœias of the United States and Great Britain, under the titles "Hydrophilic Ointment"[5] and "Unguentum Alcoholium Lanae" (Ointment of Wool Alcohols),[6] respectively.

Other hydrophilic and washable type bases have been suggested and are in use,[7] e.g., The Modified Landon-Zopf Base, Hopkins Water-soluble Base, Beelers Base, and in addition a number of pharmaceutical manufacturers are making similar bases using specific formulas which have been developed in their laboratories.

Although hydrophilic bases have a number of advantages over bases of other types and are rapidly achieving a great deal of popularity, they have two definite disadvantages: (1) a tendency toward evaporation during storage and (2) a susceptibility to mould growth.

Water Loss

Since hydrophilic bases have water in their external phase there is a tendency toward evaporation during storage. This makes it difficult for a pharmacist to maintain uniformity in prescriptions calling for the use of such bases, because the water loss may lead to a physical change and hardening of the base. It may be added that under normal conditions this factor may not necessarily be of major significance; however, over an extended period of time there can be a considerable change.

Mould Growth

Having water in the external phase renders hydrophilic bases susceptible to mould growth, unless a preservative is added.

The objective of this investigation was to prepare anhydrous emulsifiable solid-mixtures, which could be used for the extemporaneous preparation of hydrophilic ointment bases by the simple addition of water, thus eliminating the need for the prolonged storage of these bases. This would also facilitate the shipping and insure a more uniform consistency of finished prescriptions, as well as minimizing the chances of developing mould growth.

EXPERIMENTAL

In the early stages of this investigation, numerous materials and their combinations were studied to find satisfactory formulas for the solid mixtures. In the development of the formulas, care was taken to see that the methods of formulation were sufficiently simple to make the products convenient for use.

The various solid-mixtures, as well as the ointment bases prepared from them, were subjected to stability and compatibility tests, and the following two are presented as the most satisfactory.

Solid-Mixture A:

Stearyl Alcohol	53.0 Gm.
Cetyl Alcohol	7.0 Gm.
Polyethylene Glycol 400*	38.6 Gm.
Sodium Lauryl Sulfate	1.4 Gm.
	100.0 Gm.

* Products courtesy of Carbide and Carbon Chemical Corp., New York City.

Solid-Mixture B:

Stearyl Alcohol	64.7 Gm.
Cetyl Alcohol	8.6 Gm.
Carbowax 1000 Monostearate*	13.0 Gm.
Carbowax 1540*	8.7 Gm.
Anhydrous Lanolin	5.0 Gm.
	100.0 Gm.

Method of Preparation: Melt the ingredients together and stir vigorously until complete solidification. Continued stirring is necessary to insure complete mixing of the ingredients, and for the production of a granular product.

Physical Properties of the Solid-Mixture: They are white to yellowish-white coarsely granular powders, slightly soluble in water but completely soluble in alcohol and benzene. Their melting point range is from 56° to 68° C.

Preparation of Base A: Melt 50 Gm. of solid-mixture A, heat it to 70–75° C., and add it to 50 Gm. of water at the same temperature. Stir until the emulsion begins to solidify and cools to 40° C.

Preparation of Base B: The method is the same as that used for base A except that the amounts of solid-mixture B and water are 40 Gm. and 60 Gm., respectively. Overheating should be avoided when solid-mixture B is melted as it darkens at temperatures above 75° C.

Physical Properties of the Bases: The bases are white semisolid oil-in-water emulsions of ointment-like consistency. They are nongreasy and washable with water. The emulsions are stable up to 55–60° C. Base A has a better sheen than base B; both exhibit good lubricity when applied to the skin.

Aging Tests

The solid-mixtures showed no change in physical appearance or reduction in weight when stored at room temperature for 15 weeks. The bases, however, showed a reduction in weight due to water loss. The actual readings for the water loss were:

BASE A:

Loss in weight of base	6.9%
Water content of base	50.0%
Percentage loss of water	13.8%

BASE B:

Loss in weight of base	12.03%
Water content of base	60.00%
Percentage loss of water	20.05%

Compatibility Tests

A number of drugs commonly used in ointment formulations were incorporated in these bases, and any changes occurring noted at the following times:

1. Immediately following incorporation.
2. Forty-eight hours after incorporation.
3. After heat testing at 43–45° C. for 15 days.

The bases were compatible with all the drugs tested. The results of these tests are tabulated in Tables I and II below. The changes following the heat tests are not shown in these tabulations because in each case except for a slight dehydration of the upper layer no other changes were apparent.

TABLE I

Base A

Substance incorporated	Changes observed immediately after incorporation	Changes observed after 48 hours
Ammoniated mercury 5% and salicylic acid 2.5%	Slight softening	Back to normal consistency
Peru balsam 5%	Nil	Nil
Boric acid 10%	Nil	Nil
Whitfields oint. 1/2 str.	Slight softening	Back to normal consistency
Calamine 15%	Slight softening	Back to normal consistency
Iodine 5%	Nil	Nil
Sulfur 10%	Nil	Nil
Menthol 5% and methyl salicylate 5%	Slight softening	Back to normal consistency
Coal tar 5%	Nil	Nil
Phenol 2 1/2%	Nil	Nil
Sulfadiazine 5%	Nil	Nil
Sulfathiazole 5%	Nil	Nil
Icthamol 5%	Nil	Nil
Tannic acid 10%	Nil	Nil

TABLE II

Base B

Substance incorporated	Changes observed immediately after incorporation	Changes observed after 48 hours
Ammoniated mercury 5% and salicylic acid 2.5%	Nil	Nil
Peru balsam 5%	Nil	Nil
Boric acid 10%	Nil	Nil
Whitfields oint. 1/2 str.	Nil	Nil
Calamine 15%	Slight hardening	More hardening
Iodine 5%	Nil	Nil
Sulfur 10%	Nil	Nil
Menthol 5% and methyl salicylate 5%	Nil	Nil
Coal tar 5%	Nil	Nil
Phenol 2 1/2%	Nil	Nil
Sulfadiazine 5%	Nil	Nil
Sulfathiazole 5%	Nil	Nil
Icthamol 5%	Nil	Slight darkening
Tannic Acid 10%	Nil	Nil

* Products courtesy of Carbide and Carbon Chemical Corp., New York City.

Absorption Tests

The object of these tests was to determine to what extent drugs incorporated in these bases are absorbed through the intact skin.

Each base was tested on six albino rats. The hair on the back of these animals was clipped to expose the skin. Then one gram of a 5% ointment of phenolsulfonphthalein (prepared with the base being tested) was applied to this exposed area. The animals were taped to insure that the ointment remained in contact with the skin and was not lost due to movements or through ingestion.

After taping, the animals were placed in separate metabolism cages and their urine collected for a period of 24 hours. Since phenolsulfonphthalein is not stored in the body but is excreted unchanged through the kidneys it was assumed that this urine contained all the dye absorbed through the skin during the 24-hour period.

The urine specimens thus collected were diluted with water to a liter and centrifuged. One milliliter of 5% sodium hydroxide was added to each specimen. The intensity of the pink color developed due to the interaction of the alkali and phenolsulfonphthalein was compared by means of a photoelectric colorimeter with a standard solution of the dye which had been similarly treated.

The amount of dye in each 24-hour urine specimen was thus found and the percentage absorption calculated. The results of this test are tabulated in Tables III and IV.

TABLE III

Base A

Rat No.	Colorimeter reading	Mg./liter of P. S. P. in standard sol. giving same reading	Percent of Absorption
1	73	0.85	1.7
2	72	0.90	1.8
3	49	2.00	4.0
4	61	1.45	2.9
5	77	0.65	1.3
6	76	0.69	1.38
		Average	2.51

TABLE IV

Base B

Rat No.	Colorimeter reading	Mg./liter of P. S. P. in standard sol. giving same reading	Percent of Absorption
7	69	1.05	2.1
8	62	1.38	2.76
9	45	2.2	4.4
10	58	1.6	3.2
11	36	2.9	5.8
12	72	0.90	1.8
		Average	3.34

DISCUSSION

Solid-Mixture A

Stearyl alcohol was one of the first substances investigated as a basis for this product, as it was known to have a high water number; in addition, it forms oil-in-water emulsions which are very stable and which permit considerable dilution with water.[8] However, emulsions of stearyl alcohol and water were found to soften on levigation, particularly if salicylic acid or salicylates were being incorporated.

The tendency of the emulsion to soften on levigation was overcome by using a mixture of 87.5% of stearyl alcohol and 12.5% of cetyl alcohol instead of stearyl alcohol alone.

Since the preparation of the ointment base from the solid mixture is an emulsification process, the selection of a good emulsifying agent was essential.

A number of emulsifying agents were used to determine which of them would produce a good emulsion and also be miscible with the solid mixture. Among those tested were:

1. The Spans
2. The Tweens
3. Glycerol monostearate
4. Polyethylene glycol stearates
5. Sodium lauryl sulfate

All of these were miscible with the stearyl and cetyl alcohols and produced good emulsions. The first four had the disadvantage that they made the solid-mixture greasy to the touch and the emulsions prepared with them dried out very rapidly due to the evaporation of water from the external phase. In addition, the Spans and Tweens imparted a yellowish color to the solid-mixtures.

Sodium lauryl sulfate was selected as it had the advantage that a minimum amount was required for the production of a very satisfactory emulsion.

The combination of the alcohols and the sodium lauryl sulfate still did not furnish a product of desirable physical properties. The base prepared from this combination did not exhibit sufficient lubricity and lost water too rapidly by evaporation. It was, therefore, thought desirable to add a humectant and lubricating agent to the

solid-mixture. The following were investigated for this purpose:

1. Glycerin
2. Propylene glycol
3. Polyethylene glycol 400

Polyethylene glycol 400 was found to be most satisfactory as it not only increased the lubricity and reduced the rate of dehydration but was also very miscible with the solid-mixture.

To prepare an emulsion of an ointment-like consistency, it is recommended that the solid-mixture and water be in a ratio of one to one.

Solid-Mixture B

Solid-mixture B was developed as a product which would cause greater absorption of medicinal substances through the intact skin. Reference to Table IV will show that this objective was successfully achieved.

Carbowax 1540 was used in this product because the carbowax compounds have been shown to enhance the rate and amount of penetration of medicinal substances;[9] in addition, they have the desirable property of remaining soft on application to the skin and are washable with water. Carbowax 1540 also retarded the dehydration of the base and increased its lubricity.

Carbowax 1000 monostearate (a semisolid product at room temperature) was used as the emulsifying agent as it is less sensitizing physiologically than sodium lauryl sulfate and it also seemed to serve as a humectant.

At this point, the need for an additional humectant and lubricating agent was felt, to further retard the dehydration and increase the lubricity. The addition of 5% of anhydrous lanolin gave the desired result.

CONCLUSION

These solid-mixtures should prove useful to the pharmacist, for they not only reduce the possibilities of dehydration and mould growth in hydrophilic bases, but would also facilitate their storage and shipping; in addition, the ointment bases made from these two solid-mixtures are heat-stable and compatible with a large number of drugs.

The use of solid-mixture A is recommended when a low systemic absorption is desired. This solid-mixture would be more useful if a high percentage of dry powders are to be incorporated in the base, as the base prepared from solid-mixture B (Base B) was found to harden under these conditions.

Solid-mixture B, on the other hand, would be useful if a greater systemic absorption is desired and when salicylates are to be incorporated as it is comparatively more stable in their presence.

It may be added that it is not believed that this is the last word in products of this nature. It has been pointed out in the experimental data that heat is necessary for the preparation of the final emulsion from these solid-mixtures. The ideal product of this type is one which would not require heat for the formation of the emulsion but in which the simple addition of water and agitation would suffice. This would make the product even more convenient to use. Further work is being done in this direction.

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Veterans Studying Pharmacy

Nearly 13,000 World War II veterans are studying pharmacy in colleges and universities under the G.I. Bill and Public Law 16. Another 622 are training in related fields, such as drugstore management and chemical products manufacturing.

These totals were disclosed in a Veterans Administration study of the principal courses and employment objectives of 2,535,385 veterans enrolled in schools and job training establishments under both laws on December 1, 1948.

Eligibility for G.I. Bill training consists of (1) active military service some time between September 16, 1940, and July 25, 1947; (2) service of at least 90 days, or a discharge for service-connected disability if released before 90 days, and (3) a discharge under conditions other than dishonorable.

For Public Law 16, requirements are (1) military service between the 1940 and 1947 dates; (2) discharge other than dishonorable; (3) a compensable service-connected disability, and (4) VA's determination that training is necessary to overcome a handicap.

While in training, veterans may receive a subsistence allowance from VA.

WHAT'S HAPPENING IN THE MEDICAL CARE FIELD

Flanders, Herter Offer Substitute for Truman's Plan as Congressional Hearings on Health Bills Close—AMA Issues Another Statement of Policy

THIS is the fifth in the A. PH. A. series of articles on national planning for medical care. This article reviews recent events which may have important implications for pharmacists. Any medical care plan devised, even though "pharmaceutical phases" may not be specifically stated, affects pharmacy.

Earlier articles in this series summarized the existing medical care plans, the major medical care plans introduced into the 81st Congress, and some plans suggested, but not in the form of legislative bills. These articles also discussed revisions offered for plans already introduced in the Senate and House of Representatives and presented some of the conflicting views of plans under consideration.

A new "Republican" medical care bill, the Flanders-Herter bill (S.1970), has been introduced. The American Medical Association has decided upon a course of "affirmative action" on the nation's health problems, but remains firmly opposed to compulsory national health insurance. Subcommittees of the Senate and the House have heard testimony for and against provisions of the various pending health bills.

Flanders-Herter Bill

On May 31, after the Senate and House subcommittees had opened hearings on the medical care bills introduced in the 81st Congress, Senator Flanders introduced a new voluntary, nonprofit, prepayment health service plan intended as a substitute for President Truman's compulsory health plan.

Entitled "The National Health Act of 1949," the new bill (S.1970) makes no specific mention of the pharmacist as a partner in the health services personnel. It limits federal aid in education of medical care personnel to schools of medicine and nursing. Medicine and drugs are listed only in the definition of "personal health services" as items to be provided, along with dressings, supplies, prostheses and appliances (including eyeglasses), "when prescribed by licensed physicians."

"Personal health services" are defined in S.1970 to mean "services rendered to individuals by licensed physicians, licensed dentists, and under the supervision of licensed physicians or dentists, by auxiliary personnel including nurses and attendants, laboratory and X-ray technicians, physiotherapists, psychologists, dental hygienists, optometrists, podiatrists, medical social workers, and health educators or counselors. . . ."[1]

Under this provision of the Flanders-Herter bill, it would appear that the pharmacist may expect to be considered a part of the medical care personnel only among the unnamed "auxiliary personnel . . . under the supervision of licensed physicians or dentists."

According to Senator Flanders, this bill, sponsored by two Republican Senators (Ives, N. Y.; Flanders, Vt.) and seven Republican Representatives (Herter, Mass.; Javits, N. Y.; Fulton, Pa.; Hale, Me.; Morton, Ky.; and Nixon, Calif.), has a threefold aim:

> "1. To make it possible, through voluntary prepayment plans, for everybody in the United States, of whatever income, to obtain adequate health care to the fullest extent that medical resources permit.
>
> "2. To see that the quantity of health service is expanded and its quality raised throughout the Nation by progressively eliminating shortages in our medical resources.

"3. To do these things in such a way as to foster constructive freedom of action, and the responsibility that goes with it, on the part of both patients and doctors, individuals and associations, communities and States."[2]

Like the other health bills, S.1581 (Taft), S.1456 (Hill) and S.1679 (Administration), S.1970 (the Flanders-Herter bill) is an omnibus measure that includes many provisions affecting the nation's health. In addition to its prepayment health service plans with a novel sliding scale of payments and government subsidy to cover medical care cost deficits, the bill provides for:

1. Federal aid to state plans for "special need areas"—those localities where acute shortages of personnel and facilities impede health service.
2. Increased federal funds for hospital and health center construction and expansion by amendment to the existing Public Health Service Act.
3. Increased federal funds for expansion of local public health units by amendment to the existing Public Health Service Act.
4. Federal grants for medical and nursing education to relieve "the most serious and urgent of the personnel shortages affecting the Nation's health."
5. Creation of a Federal Health Study and Planning Commission which would carry on continuing and comprehensive studies of the nation's health needs, maintain accurate and current information on the health needs of the nation, and develop a long-range health program for the nation that would be revisable with the growth and change in medical care resources.

Differs from Taft and Hill Bills

Like the Taft and Hill bills, the Flanders-Herter bill provides for prepayment health service plans, but there are several differences from the provisions of those earlier bills.

One major difference is the absence from the Flanders-Herter bill of a "means test" for the subscribers to voluntary prepayment health service plans. In effect, the Taft and Hill bills require a "means test" for those persons who would need assistance in paying for voluntary prepayment health service plans. In contrast, the Flanders-Herter bill gives everyone an automatic right to subscribe to a prepayment plan for medical care at a fee scaled to his income, with any deficits in medical care cost absorbed by government subsidy.

A comprehensive range of benefits to be provided by the prepayment health service plans is defined in the bill together with the subscription charges for the services fixed in terms of the subscriber's family income. This section of the bill amounts to a national "yardstick" of health services and costs.

States Would Be Responsible

Responsibility for the administration of the health service plans would reside in a State health council, appointed by the governor of each State, and the local authorities of "health regions" into which each State would be divided.

Membership of the councils or health region authorities would not include any practicing physicians, dentists, or any other persons engaged in health service, because of their direct financial interest in the health service plans. Each council and authority would, however, "have medical and other advisory committees."[3] Pharmacists, as well as other health service personnel, would therefore be excluded from membership on the State health councils and the "health region" authorities, and could only be included under the provision for "other advisory committees."

Normal local cost for the services defined in the "yardstick" would be estimated by the State "health region" authorities. Should the charges to the subscribers, also defined in the "yardstick," be less than the estimated normal local cost, the difference would be made up by Federal and State subsidy.

A subscription charge cannot be less than 3% of the subscriber's income, up to $5000, for the complete coverage as defined in the bill. This includes:

"All services of licensed physicians in the home, office, or hospital (including periodic health examinations, diagnostic examinations and tests, and immunizations and other preventive services); hospital services while a bed patient in a hospital (including bed nursing, X-ray and laboratory examinations and tests, and all forms of treatment commonly furnished in a hospital) in minimum accommodations adequate to care of the

case, for a period of thirty days in the aggregate during a subscription year; visiting-nurse service and ambulance services when prescribed by a licensed physician."[4] (Exempted are sanatorium care for tuberculosis, post-diagnosis psychiatric care for mental or nervous disorders, and institutional care for chronic illnesses.)

For less service or for different combinations of service, the charges would be adjusted, but a minimum participating charge is set at $6 per year. This minimum fee may be paid by the State for unemployed persons or for public wards.

Although $5000 is the highest income used in figuring participation charges, persons with larger incomes may participate in any selected health service plan under the Flanders-Herter bill. "Indemnity benefits," providing payment of "specified sums of money toward the cost of specified personal health services," apparently, will be the means of providing for such persons instead of full payment for specified personal health services.

Coverage of Subscribers

If the coverage selected by a subscriber provides the range of services for which 3% of income (up to $5000) is the fixed charge, the subscriber and his dependents would be covered by his payments. Example:

> "A subscriber with an income of $1500 would pay $3.75 a month; one with $2500 would pay $6.25 a month; and one with $3800 would pay $9.50 a month. They will all get the same services, the deficit created by the lower incomes being made up by the State-Federal aid. Thus, if the annual cost allowed to the plan by the regional authority were $114 per family (which would be about the estimated average for the Nation), and if the average family in the plan paid $75 a year, then the State-Federal aid would contribute $39 per family to cover the deficit to that plan."[5]

Sponsors of S.1970 claim that it "would place and preserve primary responsibility for the development of adequate health services in the States and local communities where the needs are most accurately known and best can be met, rather than at the remote Federal level,"[6] and that the extent of the Federal participation, through aid to State and local undertakings, will be determined by the extent of voluntary response.

A.M.A. Recasts Its Views

"Positive, decisive, progressive action without sacrificing any of the fundamental principles of American medicine,"[7] recommended by its Council on Medical Service, was approved by the American Medical Association at its annual meeting in Atlantic City the week of June 6 to 10.

Without affecting its opposition to compulsory national health insurance, the American Medical Association took the following steps in clarifying its position with respect to the medical care of the nation:

1. It withdrew its objection to voluntary medical care programs not exclusively sponsored by physicians. This action will open the way for State and county medical societies to approve, under specified conditions, the medical and hospital care plans operated by laymen.

2. It withdrew completely from the direction of the Associated Medical Care Plans (Blue Cross and Blue Shield) and urged the expansion of voluntary health insurance programs.

3. It outlined plans for a national health conference for "all interested groups," to be held later this summer. Labor, government, and groups favoring compulsory health insurance as well as professional and lay groups opposing it, are to be invited to discuss the 12-point Program for the Advancement of Medicine and Public Health which the Association recommended in February, 1949.

4. It recommended nation-wide promotion of a voluntary health campaign with emphasis on positive phases of the educational program in this field.

Recognizing its responsibility for "seeing to it that the principles under which any health plans . . . are organized," would "give assurance to the individual participants that the quality of medical care will not be adversely affected,"[8] the A. M. A. suggested the following principles for lay-sponsored voluntary health plans:

1. The plan shall be nonprofit, paying no dividends to beneficiaries or others; all surplus earnings shall be devoted either to improving the services, to making compensation of physicians and other staff members more adequate for their responsibilities and services, to purchasing facilities and equip-

ment, to increasing the scope of benefits, or to building adequate reserve funds. All income to the plan shall be devoted to services for beneficiaries.

2. The plan shall comply with the Principles of Medical Ethics of the American Medical Association, which provides that it is unprofessional for a physician to dispose of his professional attainments or services to any lay body, organization, group or individual, by whatever name called, or however organized, under terms or conditions which permit a direct profit from the fees, salary or compensation received to accrue to the lay body or individual employing him.

3. If incorporated, the plan shall be adequately financed and organized without capital stock.

4. The plan shall be operated under an autonomous administration or trust, with segregated funds, and shall be devoted exclusively to the provision of health service.

5. Promotion, sales, organization and administrative expense of the plan shall be kept at a minimum as judged by the accrediting body.

6. The quality of medical service shall be maintained at the highest possible level. All participating physicians shall be doctors of medicine duly licensed to practice medicine in any state in which the plan operates. Each physician engaged in the practice of a specialty shall be required to have adequate qualifications for that specialty. The personnel and facilities of the plan shall be adequate to insure a high quality of medical care.

7. The plan shall provide all services as set forth in the agreement with the beneficiary. When, in the opinion of the medical staff, a professional service set forth is not available because of an emergency or because of the need for highly technical procedure, or for any other reason, then such service shall be otherwise provided by the plan.

8. The plan, in its agreement entered into with the beneficiary and which shall be distributed to each beneficiary, shall state clearly the services and benefits to be provided and the conditions under which they will be provided. All exclusions, limitations, waiting periods and deductible provisions shall be clearly stated in the agreement with the beneficiary and in promotional and descriptive literature.

9. The plan shall, in its agreement with the beneficiary, state clearly the amount of dues or subscription to be paid. The amount of dues or subscription shall be adequate to provide for the benefits and services offered and to insure proper financing of the risks involved.

10. No promotional material shall invite attention to the professional skill, qualifications or attainments of the physicians participating in the plan.

11. Participating physicians may be compensated in any manner not contrary to the Principles of Medical Ethics of the American Medical Association relating to contract practice.

12. Any duly licensed physician in the community who wishes to participate in the plan, who meets its professional and personal standards and who agrees to abide by its terms and the requirements of its beneficiaries, shall be admitted to the plan.

13. The names of all participating physicians of the plan shall be made available to the prospective beneficiary. The beneficiary shall, within reasonable geographic and professional limitations, have free choice among participating physicians.

14. There shall be no interference by the governing body with the medical staff in the practice of medicine. The traditional and confidential relationship of the physician and patient shall be preserved.

15. Adequate provision shall be made for effective participation of the medical staff in the deliberations of the governing body. It is recommended that the membership of the governing body include representatives of the medical profession.

16. All services rendered by the participating physician, not included in the beneficiary's contract, shall be payable by the beneficiary to the participating physician on a fee for service basis.

17. The method of operation of any hospital owned by or under contract to the plan shall be in accordance with sound public policy.

18. The plans shall provide for like rates, benefits, terms and conditions for all persons in the same class.

19. Investment of reserve funds shall be made only in securities deemed prudent for such purposes.

20. Any plan desiring approval under these principles shall agree to such periodic reviews and to abide by such regulations as may be deemed necessary by an appropriate accrediting body of the American Medical Association in consultation with representatives of the sponsors of the plan.

Congressional Committee Hearings

Congressional committee hearings began May 20 on the health bills, including: S.1581 (Taft), S.1456 (Hill), and S.1970 (Flanders-Herter) which include provision for voluntary health insurance plans; S.1679 (Administration) which provides plans for compulsory national health insurance; and S.1106 (Lodge) which provides "free drugs and limited medical assistance to the needy."

The Senate subcommittee ended its hearings June 29. The House subcommittee had held one general hearing and on July 7 completed hearings on five phases of S.1679 (Administration)—Education of Health Personnel, Medical Research, Hospital Surveys and Construction, Grants to States for State and Local Health Work, Research on Child Life and Grants for Maternal and Child Health and Crippled Children's Services.

Legislation covering individual phases of the various health bills have been introduced

in both houses of Congress during the Congressional subcommittee hearings on the major health bills. Favorable action on any of these individual bills may have the effect of relieving the 81st Congress of the burden of passing any complete-in-one-act health legislation that would include health insurance, compulsory or voluntary. At this writing the passage of any major health bill embodying insurance features is extremely problematical.

REFERENCES

1. S.1970, p. 5.
2. *Congressional Record*, May 31, 1949, p. 7137.
3. *Ibid.*, p. 7137.
4. S.1970, p. 15.
5. *Congressional Record*, May 31, 1949, p. 7137.
6. *Ibid.*, p. 7139.
7. *J. Am. Med. Assoc.*, 140, 685(1949).
8. *Ibid.*, p. 686.

STRAIGHT FROM HEADQUARTERS

(Continued from Page 401)

sessions which are held concurrently, that relatively few cities are now able to accommodate the ASSOCIATION under one roof. Atlantic City is unusually well provided with hotels and meeting facilities, especially at the time of year selected for the 1950 meeting. It is therefore expected that the attendance will break all previous records.

An unusual program of scientific and professional activities is being planned. Atlantic City also affords splendid facilities for entertainment and restful recreation.

Reservations will, as usual, be handled through the Convention Bureau, and each member will receive a direct mail invitation with forms on which to make requests for reservations. It will be appreciated if our members will await the receipt of this communication before making their reservations so as to be assured of the special convention rates and an orderly assignment of accommodations.

It is not too early for the Section officers to plan their programs and since plans for revision of the next U. S. P. will be inaugurated in the following week at Washington, it is logical to have those who are interested in development of drug standards, build some of their programs around U. S. P. and N. F. revision.

Suggestions for papers and programs will be welcomed by the officers of the A. PH. A. and the officers of the Sections, whose names and addresses are listed on page 388. It is not too early to plan for your trip to Atlantic City in April, 1950, followed by the visit to Washington for the U. S. P. Convention.

A. Ph. A.'s First Vice-President

Harold C. Kinner

Harold C. Kinner, Washington, D. C., retail pharmacist and first vice-president of the AMERICAN PHARMACEUTICAL ASSOCIATION, was born at Elmira Heights, N. Y., December 20, 1902. He moved to Washington at an early age and has been a resident of the Nation's capital ever since. Mr. Kinner received his pharmacy degree in 1928 and his B.S. in 1941 from George Washington University School of Pharmacy. In 1933 he formed a partnership with a former classmate, James A. Membert, and opened the retail drug firm of Kinner and Membert. Mr. Kinner joined the AMERICAN PHARMACEUTICAL ASSOCIATION in 1940. He is a member of the Conference of Pharmaceutical Association Secretaries and the National Association of Retail Druggists, and represents the National Association of Boards of Pharmacy in the Drug Trade Conference. Appointed in 1940 to the District of Columbia Board of Pharmacy as examiner in *materia medica*, he was elected secretary of the Board in 1943 and has served in that capacity for the past six years. Mr. Kinner also has been secretary of the D. C. Pharmaceutical Association continuously since 1942 with the exception of one term during which he served as president. For the past five years, Mr. Kinner has been a lecturer in pharmaceutical law at George Washington University School of Pharmacy.

Index of Scientific Papers Available

The Office of Technical Services, Department of Commerce, Washington, D. C., now makes available to the public a new subject index and abstract collection of more than 1000 unclassified scientific and technical reports prepared by the Combined Intelligence Objectives Subcommittee dealing with European technology. This publication of the Joint Chiefs of Staff, the first of a series of such volumes, sells for $3.

A NEW DESIGN FOR A MORTAR AND PESTLE

By M. L. COOPER*

THE USE of the mortar in the art of the apothecary is referred to quite often in the Old Testament history. The form of mortar used in those days is not known, but stone Pharaonic carvings and ancient Papyri indicate that the early mortars were similar in form to those used centuries later. Whether these mortars, made of wood or stone, were used for culinary purposes or for contusing spices, we do not know. There is evidence of the use of a mortar and pestle by the North American Indians for grinding grain and wheat into a powder by pounding with a large pestle in a mortar.

In the early days of the Roman Empire when pharmacy, allied with medicine, became a practical art, we have the first real evidence of the introduction of the squatty earthenware mortar for pharmaceutical purposes, which compared with the tall metal mortars of the Renaissance. At the beginning of the Renaissance, mortars of copper, brass, bronze and iron came into wide use.

The first literary reference to the mortar seems to have been made by the Persian physician Razi. The early mortars of Persia and Mesopotamia were usually of bronze with elaborate carvings.

In 1780 Wedgwood introduced a new biscuit porcelain mortar and a wooden-handled pestle. This type has remained in use until the present day, augmented by similar types in glass and glazed procelain.

This conventional type of mortar and pestle has served us well in the past, but we must progress with the times. There is need for a change in design to facilitate faster and better mixing, possibly by creating a change from a concave mortar and convex pestle to a flat-bottom mortar with vertical sides and a flat-bottom pestle with vertical sides of such diameter as to fit exactly into the mortar. Such a mortar and pestle would provide maximum contact surface as compared to a limited contact surface found in the conventional type.

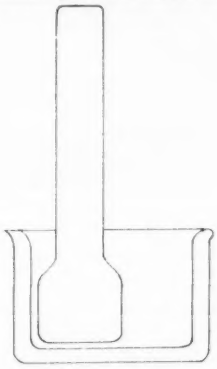
To manipulate this new mortar and pestle, the pharmacist must at all times keep the pestle in a vertical position and exert outward rotary motion, thus insuring complete distribution, mixing, or emulsification. This is quite different from the rocking motion employed when using the conventional type. Experience with the new mortar has indicated that the use of the spatula is not required as much as with the old type.

In the mixing of two chemicals, for example charcoal and heavy magnesium oxide, one dram of magnesium oxide was placed into each type of mortar. On top of this white powder were placed three grains of powdered charcoal and 12 complete revolutions of the pestle were made. Without resorting to chemical analysis, there is conclusive evidence that the new-type mortar and pestle provides a better distribution than the conventional type. With the new type there are no signs of black streaks visible in the white magnesium oxide, the mixture appearing as a well-mixed gray powder. The mixture obtained using the conventional type is much less homogeneous, the charcoal appearing as black streaks through the white magnesium oxide.

By having a flat-bottom pestle whose diameter is practically the same as the radius

* Prescription Pharmacist, Baltimore, Md. Presented before the Practical Pharmacy Section, AMERICAN PHARMACEUTICAL ASSOCIATION, Jacksonville, Fla., April, 1949.

of the mortar one can visualize the increased amount of crushing surface, the increased amount of grinding surface, and the increased amount of distributing surface. Thus when crushing tablets, as we have to do many times today, the efforts required are decidedly less and the results better. When preparing emulsions in both types of mortars, using, for example, oil, Acacia, and water as a primary emulsion, the results are quite different. Only 20 seconds are required in the new type, and the resulting primary emulsion can be diluted 64 times without breaking or cracking. On the other hand, when the experiment was repeated with the conventional type, complete emulsification was not achieved even after three minutes' trituration (nine to 10 times the trituration period required when using the vertical type).



* DESIGN OF NEW MORTAR AND PESTLE

Tests for grinding were made at the Johns Hopkins University under the supervision of Dr. Ralph K. Witt, Associate Professor, Chemical Engineering. Three samples of U. S. P. Sodium Chloride were analyzed for particle size. In each case the sample was shaken in a standard sieve shaker for a period of five minutes. The results of these analyses are given in the table below:

Comparative Tests of Old and New Type Mortars and Pestles

Sieve mesh	Conventional type porcelain	New type metal	New type porcelain
120.....	76.5	94.214	70.02
170.....	14.2	4.43	14.8
200.....	6.68	1.1	....
250.....	2.62	0.256	13.12
325.....	....	.....	1.92
0.0017 in.....	....	.....	0.14
	100.00%	100.000%	100.00%

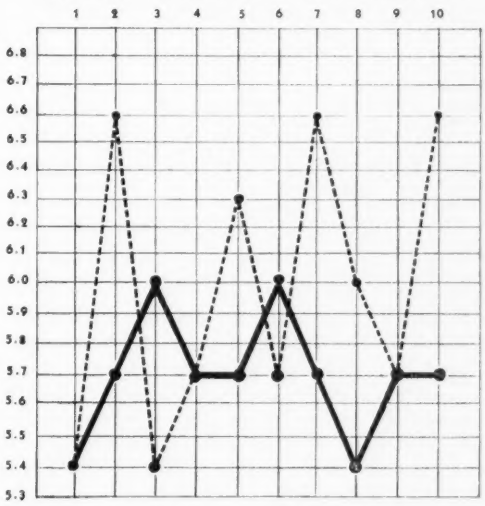
One will note that the metal mortar and pestle produced very unfavorable results. This can be explained because of the smooth surfaces of the polished metal which did not allow friction. Nevertheless, the result speaks for itself when comparing the old porcelain type with the new porcelain type. It might interest one to know at this time that the mesh of the average man's shirt is approximately 80 mesh. Compare this with the mesh of a sieve finer than 325 mesh that will allow 0.14% to go through. This powder is light enough to be classed with dust.

Tests for mixing were conducted by Dr. J. Rich Holland, President, Wiley and Co., Inc., Analytical and Consulting Chemists, Baltimore, Md.

The chart below shows a 5% sodium chloride and 95% sodium sulfate mix. These two chemicals were triturated for a very limited time without the use of a spatula. Ten different samples were used in each type of mortar and pestle. The broken line represents results obtained when using the conventional type mortar and pestle mixtures, reaching the high concentration of 6.6% three times and 6.3% once, also reaching a low concentration of 5.4% twice. The solid line represents the results obtained with the new type mortar and pestle mix, reaching a high concentration of 6% only twice and a low of 5.4% two times, clearly illustrating the more uniform mixing when using the new type.

Tests for the quality of emulsion were carried out by Dr. George P. Hagar, Professor of Chemistry, School of Pharmacy,

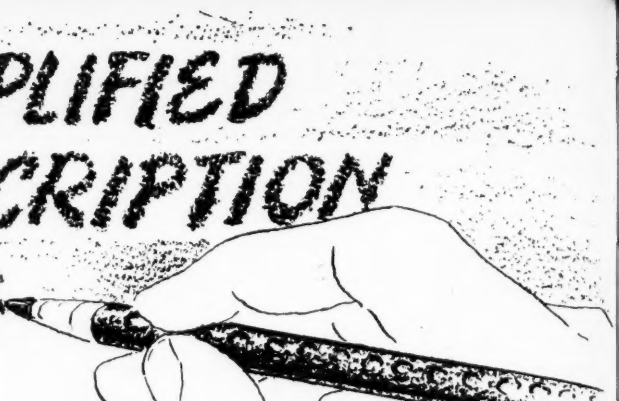
TEST SHOWING COMPARATIVE RESULTS OBTAINED FROM CONVENTIONAL AND NEW TYPE MORTAR



* U. S. and Foreign Patents Pending.

(Continued on Page 429)

SIMPLIFIED PRESCRIPTION PRICING



By

W. Paul Briggs*

WEBSTER says that to simplify means to make easier or shorter. However, the root word simple is synonymous with unsophisticated or naive. This paper is intended to describe an easier and shorter method for pricing prescriptions. But when weighed against the background of your experience and the complexity of the problem, I may be judged unsophisticated and naive for attempting to reduce prescription pricing to a simple procedure.

Ten years ago, comments from pharmacists indicated that new graduates could fill prescriptions but could not price them. This criticism was justified. However, it was soon discovered that practicing pharmacists seldom had a magic formula to correct the problem. The usual pricing procedure appeared to be an uncertain plan of "guestimating," which combined courage and fear, charity and greed, hope and despair, grim dollar realities and gentle optimism. This led me to attempt to develop a set of simple rules to facilitate the teaching of prescription pricing. To this end it was considered more important to keep the rules simple than to cover every unusual circumstance.

Recognizing that most pharmacists have a touch of the "prima donna," I also sought an integrated system that could retain any general usefulness, even if users changed some of the fixed prices or percentage mark-ups. The resulting "Guide to Prescription Pricing" was published in the January, 1940, issue of THIS JOURNAL. In 1946 this "Guide," in slightly modified form, was adopted by the Veterans Administration as the basis for pricing prescriptions under the "home town" medical care plan for veterans. Millions of prescriptions in every State in the country have been priced by this plan during the past three years, and except for occasional minor criticisms, it has served a useful purpose.

Pharmaceutical Compounding and Dispensing, J. B. Lippincott and Co., includes a chapter on Prescription Pricing based upon the original "Guide," and the Veterans Administration Schedule. In its present form the schedule is known as the "Systematic Prescription Pricing Digest." The prescription pricing table from this chapter has been reproduced in the form of a chart by Bristol Laboratories, and has been made available to practicing pharmacists, hospitals, and pharmacy schools.

The "Digest" is a compromise between the "fixed fee" and computation type pricing plans. It presents a set of principles intended to regularize procedure and insure profitable, uniform pricing. I would particularly stress the *guidance* or *pattern* aspects of the "Digest." Neither the fixed prices, the percentage mark-ups or minimum prices are to be considered as recommendations, but merely as illustrations to show how the schedule and rules work. Any or all of the listed fees, percentages or minimums

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* Professorial Lecturer on Pharmacy, George Washington University School of Pharmacy, Washington, D. C. Presented before the Section on Pharmaceutical Economics, AMERICAN PHARMACEUTICAL ASSOCIATION, Jacksonville, Fla., April, 1949.

can and should be raised or lowered to suit the purpose of the user. Thus, the usefulness of the "Digest" as a set of rules to insure uniform pricing within any single operating unit is retained, with complete flexibility as to actual fees charged.

To develop a practical working guide, originally intended for student instruction, mathematical precision and exceptional cases always were sacrificed to attain simplicity. In no other way can a workable pattern for prescription pricing be developed to serve students or busy practicing pharmacists. Thus, there are a few obvious inconsistencies and some arbitrary classifications to be found in the "Digest." For example, under some circumstances, 24 tablets would be priced higher than 30 tablets of the same product. The rate of profit does not always show a proportional relationship to cost, but a satisfying profit is derived in every case. In considering these and other academically challengeable aspects, bear in mind that the average margin in prescription prices is substantial; that prescription quantities and composition are not directly identifiable by patients; and that prescription department profits should be measured by annual net gain, not by individual prescription margins.

Computation type pricing plans usually determine fees for compounded prescriptions by doubling the costs of material and container and adding a compounding fee based upon number of doses or a rate per hour charge. Fixed fee plans generally establish arbitrary charges based upon type and quantity of prescriptions. The first method, while theoretically precise, does not give constant values as interpreted by different pharmacists and involves time-consuming calculations for every prescription. The second type is favored by most pharmacists because of the convenience, but objected to because of lack of flexibility to cover expensive drugs and proprietaries.

The "Digest" attempts to combine the desirable features and eliminate the faults of both computation and fixed fee type pricing plans. In most pricing schedules, before establishing the final fee, the computed price, however determined, must be compared with a minimum price arbitrarily set for each type prescription. The established minimum price is used and the calculated price disregarded, whenever the arbitrarily established minimum price is greater than the value arrived at by calculation. Thus, the so-called "minimum price" is, in effect, an arbitrary "average price." In the "Digest" the "minimum price" is designated in accordance with its actual application as the "average price." This average price is used for compounded prescriptions without comparison or calculation unless the prescription contains very expensive ingredients or requires unusual time-consuming procedures. Because of the relatively broad margins of profit and because expensive ingredients are always "flagged," mentally or otherwise, pharmacists need to compute *actual* costs only in cases of compounded prescriptions containing significant quantities of known expensive ingredients. Calculations for increases in Schedule Prices, because of these factors, will be required only in approximately four of each one hundred prescriptions. In comparison, when using a computation type schedule with a minimum price floor, calculation is required to determine the exact cost and the selling price in every case.

While the "Digest" which is reproduced on pages 426 and 427 is largely self-explanatory, some brief comments may be in order.

The Schedule Prices include all costs, profit, and professional fee and apply to all hand-made or compounded prescriptions and most prescriptions for less than manufacturers' original size of liquid, solid or powder proprietaries. This is the part of the "Digest" which follows the traditional fixed fee pattern. These prices were established after an extensive survey of average prices charged in a representative group of pharmacies. The values were determined in 1945 and under present price levels may be somewhat low. The adjustment of these prices to prevailing or desired levels can be accomplished to suit any pharmacy without losing the value of the "Digest" as a pattern to accomplish uniform prescription pricing.

Instruction IA provides for increases in the Schedule Prices to the extent of the cost of the amount used of any expensive ingredient, if such cost amounts to one-fifth or more of the Schedule Price. This arbitrary factor of one-fifth could be changed to one-sixth or one-eighth or any other fraction without disturbing the usability of the rules of the "Digest." This provision would apply, for example, to a prescription for six grains of codeine sulfate, costing 4¢ per grain,

in 4 oz. of wild cherry syrup. No provision is made under this rule for an increased compounding fee or added profit on the expensive ingredient, since the gross profit and compounding fee are included in the Schedule Price for any 4-oz. mixture.

In a few instances, prescriptions may contain several ingredients, none of which alone cost as much as one-fifth of the Schedule Price, but which collectively cost as much as one-half of the Schedule Price. Instruction IB provides that in such cases the cost of all ingredients, when their total cost exceeds one-half of the Schedule Price, should be added to the Schedule Price. The Pharmaceutical Survey revealed that 77.4% of all prescriptions contained one ingredient only; 10.2% contained two ingredients and only 12% contained more than two ingredients. From this it will be apparent that very few compounded prescriptions will require price computation under this rule since only approximately 12% of all prescriptions contain more than two ingredients.

Instruction IC applies to compounded prescriptions which require time-consuming procedures such as enteric coating, adjusted ophthalmic solutions and sterile preparations. Such prescriptions are not common, but when they are encountered the "Digest" suggests a charge at the rate of $4 per hour for the actual compounding time, as an addition to the Schedule Prices.

All proprietaries in manufacturers' original size may be priced by Instruction II, which provides a 40% gross margin. The only exception is in the instance of a fair traded product. The "Digest" suggests, in the case of fair traded items, actually sold over the counter in a particular pharmacy, that under these conditions the over-counter price, adjusted to the next higher even number, be used as the prescription price. I am aware that this principle does not meet with general endorsement. Actually the number of such products is declining rapidly and probably will continue to do so as the controls of the Food and Drug Administration become more inclusive. The items falling in this category, which are dispensed upon prescription, are frequently well known to the consuming public. Whenever customers learn they have been charged a higher price because of procuring a drug on prescription, they frequently conclude that excessive prices are charged for all prescriptions. A minor sacrifice in such cases may prove a profit in terms of consumer confidence.

All liquid, solid or powder proprietaries, in less than manufacturers' original size, may be priced by Instruction III. When the 75% mark-up of Instruction III gives a *higher* price than the fixed fees of the Schedule, the *higher* price always should be used. This circumstance will prevail, for example, in prescriptions for quantities greater than four ounces of liquid proprietaries having a wholesale cost of more than $2.25 per pint, or quantities greater than six ounces where the wholesale cost of manufacturers' original size is $1.80 or more per pint. Similar "breaking points" will also be noted for solid and powder proprietaries in certain quantities when a relatively high wholesale cost prevails. The percentage mark-up, under Schedule Prices, is well above 75% over wholesale cost for most proprietaries, because of the usual quantities dispensed and the fact that most liquid proprietaries have a wholesale cost of less than $2.25 per pint. Only in those cases in which the rate cost and/or the quantity dispensed results in a mark-up of less than 75% that calculation is required.

Instructions IV and VI will be infrequently used. These are concerned with prescriptions for proprietaries and unit dosage medication in quantities greater than manufacturers' original size. In such cases, the fee is the sum of the charge for the original quantity and the charge for the extra fractional quantity, determined by the applicable basic rule.

All ready-made unit dosage forms of medication, in less than manufacturers' original size, may be priced by Instruction V. The use of sharply changing mark-ups at fixed points, such as one-fourth and one-half of manufacturers' original size, will result in occasional apparently inconsistent prices. To avoid this a graduated mark-up could be followed at the sacrifice of simplicity, but this is not justified by actual operating conditions. For example, a prescription for 25 tablets, with wholesale cost of $3.33 per 100, would be priced at cost ($0.83) plus *150%*, or $2.10, while 30 tablets would be priced at cost ($1.00) plus *100%*, or $2. This circumstance is not altogether exceptional, but it does not occur often and then only in certain price ranges and in quantities close to the mark-up changing point.

Pharmacists generally try to adjust prescription prices for unit dosage medication on a sliding scale of a diminishing cost per dose, proportional to the quantity purchased, similar to customary "front store" pricing. Proprietary drugs sold over counter almost invariably bear a lower unit cost for each successively larger size package and the same economic rule is applied to most commodities. Since a prescription represents an individualized service, even in the instance of prefabricated products, and since no element of quantity purchase for economy is involved, it seems illogical to continue this "business" principle in establishing fees for professional services. It will be noted that the "Digest" provides a constant rate per unit, within arbitrary fractions of the manufacturers' original size, because there is no rational basis for pricing such prescriptions as common commodities on the sliding scale of a lower rate price for larger quantities.

All calculations involving proprietaries are based upon the wholesale cost of the manufacturers' original size package nearest to the quantity called for by the prescription. The saving resulting from purchase of larger sizes and direct discounts should be considered as capital gains and, as such, the lower net cost should not be considered as a basis for calculating prices by the "Digest." In the instance of liquid, solid and powder proprietaries, the use of the wholesale cost of size nearest to the quantity of the prescription, without regard to the lower rate cost of larger sizes which may actually be purchased, or special discounts on direct accounts, will always result in a higher final fee.

Because of the one-fourth and one-half "breaking points," and the decreasing percentage mark-ups applied in calculating fees for unit dosage medication, lower prices will occasionally result from using the wholesale cost of the manufacturers' original size nearest to the quantity of the prescription. For example, a drug in tablet form may be packaged in 40's and 500's with wholesale cost of $2 and $22.50, or at the rate of 5¢ and $4\frac{1}{2}$¢ per unit, respectively. A prescription for 25 such tablets, correctly priced by Instruction V [more than one-half of manufacturers' original size nearest to quantity dispensed (40)] would result in a fee of $2.20 (cost of 25—$1.25, plus 75%). The same prescription, improperly priced upon the lower unit cost, when purchased in 500's would yield a higher fee because the quantity of the prescription (25) is less than one-fourth of the manufacturers' original size (500) and therefore the 150% mark-up would apply; specifically, cost of 25 tablets in 500's—$1.13, plus 150% for a fee of $2.85. This is an unusual circumstance for which no adjustment has been sought. To do so would require use of a sliding scale or a series of exceptions which would defeat the objective of simplicity.

All prescriptions are subject to the $0.50 minimum price. An impressive number of pharmacists feel that $0.50 is too low a fee for the professional services of a pharmacist and some use a $1 minimum fee. Obviously, the establishment of an absolute minimum fee is imperative for every pharmacy, but should be fixed individually in accordance with the character of the pharmacy and local conditions.

No reduction in initial charge should be made when prescriptions are refilled for the amount of the original prescription. All multiple quantity refills may be priced by Instruction VIII. Section B of Instruction VIII attempts to insure equitable pricing for even unusual cases encountered in the multiple quantity refilling of ready-made unit dosage forms of medication. However, this section can be simplified with only occasional inconsistencies by following the basic rule of charging for such refills the initial price, multiplied by the multiple less 10%.

All final prescription fees should be in even numbers and Instruction IX should be followed, which raises all odd values to the next higher number divisible by 5.

The Systematic Prescription Pricing Digest provides a simple, orderly and profitable procedure for regularizing the pricing of prescriptions. From experience with the Veterans Administration Schedule, it would appear that the fixed fees and the mark-ups of the "Digest" closely approximate current price levels. However, as repeatedly noted, all fees and percentages can be raised or lowered to serve any operating unit, without destroying the usefulness of the "Digest" as a means of insuring uniform pricing within a using pharmacy. Whether the fees of the "Digest" are followed or changed to suit individual circumstances, it is believed that adherence to the principles of the "Digest," with resulting uniform prices in place of "guesstimates," may be advantageous to pharmacists, teachers, and students.

SYSTEMATIC PRESCRIPTION PRICING DIGEST*

Final Prices (Schedule or Calculated) Include All Costs, Profit and Professional Fee

SCHEDULE PRICES

Volume or Weight (5)	Internal Liquids (other than drop doses)	Eye, Ear, Nose Drops, Sprays, Paints, Collodions, Internal Liquids (drop doses)	External Liquids, Lotions, Gargles, Injections, Liniments	Ointments, Plasmas, Pastes	Powders (bulk) Internal and External (based on volume)
1 dr.	.50	.50	.50	.50	.50
2 dr.	.50	.50	.50	.50	.50
4 dr.	.50	.50	.50	.55	.50
1 oz.	.55	.65	.50	.75	.60
2 oz.	.70	.85	.50	1.00	.85
3 oz.	.80	1.20	.65	1.25	1.00
4 oz.	1.00	1.50	.75	1.50	1.25
6 oz.	1.25	...	.85	2.00	1.50
8 oz.	1.50	...	1.00	2.40	1.75
12 oz.	2.00	...	1.40	2.75	2.00
16 oz.	2.50	...	1.65	3.25	2.25

NUMBER	Handmade Capsules Papers, Pills, Cachets, Lozenges, T.T.	Handmade Suppositories: Rectal, Urethral, Vaginal. Ampuls
1-2	.50	.50
3	.50	.60
6	.55	.85
12	.85	1.50
18	1.15	1.85
20	1.25	2.00
24	1.35	2.25
36	1.75	2.85
40	1.85	3.00
50	2.00	3.25
100	3.25	5.50

(If exact quantity called for is not listed, charge at rate of the average of the two nearest quantities given.)

INSTRUCTIONS

CALCUATED PRICES

COMPOUNDED PRESCRIPTIONS

I. Schedule prices are **Average** and subject to modification:

A. When the cost (1) of **any ingredient** in the amount used equals or exceeds **1/5** of the Schedule Price, **add the cost of the amount used** of such ingredients, to the Schedule Price.

* Adapted from *Pharmaceutical Compounding and Dispensing* by permission of J. B. Lippincott and Co., publishers.

B. When the total cost of **all ingredients,** in the amounts used, equals or exceeds **1/2** of the Schedule Price, add the total **cost of the amounts used** to the Schedule Price.

C. When time-consuming, special pharmaceutical skills are involved add to the Schedule or calculated price, an extra fee, at the rate of $4.00 per hour, for the actual time involved in compounding such prescriptions (Enteric Coatings, Sterile Solutions, etc.).

DISPENSED PRESCRIPTIONS

II. For manufacturers original size of **any** proprietary (4), charge cost (1) plus 66%, or prevailing over counter price (2) if any, whichever is lower.

III. For **less** than manufacturers size (3) of any liquid, solid or powder proprietary, follow Schedule Prices, **or** charge cost of quantity dispensed plus 75%, whichever is **higher.**

IV. For **more** than manufacturers size of any liquid, solid or powder proprietary, charge the **sum** of the value determined by Instruction II for quantity equivalent to manufacturers original size, **plus** value for excess quantity above manufacturers original size, as determined by Instruction III.

V. For **less** than manufacturers size (3) of any unit dosage form of medication (tablets, pills, capsules, etc.), **charge cost of quantity dispensed** plus 150% for all quantities up to and including 1/4 of manufacturers size; **charge cost of quantity dispensed** plus 100% for all quantities above 1/4 up to and including 1/2 of manufacturers size; **charge cost of quantity dispensed** plus 75% for all quantities above 1/2 up to but not including manufacturers size.

VI. For **more** than manufacturers size (3) of any unit dosage form of medication, charge the **sum** of the value determined by Instruction II for quantity equivalent to manufacturers original size, **plus** value for excess quantity above manufacturers original size, as determined by Instruction V.

VII. **Minimum price** for any prescription 50 cents.

VIII. For **refilled prescriptions in double quantity or other multiples,** charge initial price, multiplied by multiple, **less 10%.** Exceptions:

A. No reduction should be made for multiple quantities of manufacturers original size proprietary if initial charge was based on prevailing over counter price.

B. For multiples of ready-made unit dosage forms of medication:

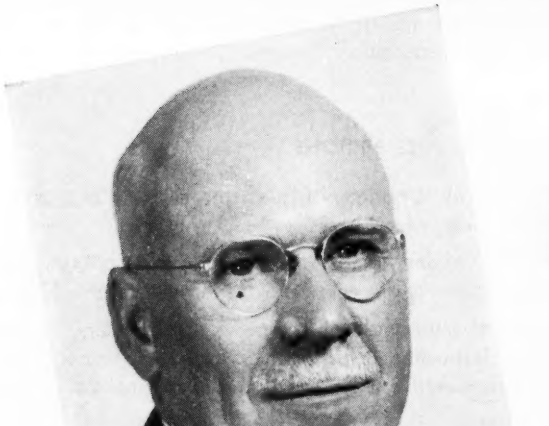
(a) Base price on quantity dispensed as given in Instruction V.
(b) **If** multiple quantity is **within same fraction** of manufacturers size as initial prescription charge initial price multiplied by multiple, **less 10%.**
(c) If multiple quantity **exactly equals** manufacturers original size, follow Instruction II and add an additional 10% to the value as computed, for final fee.
(d) If multiple quantity **exceeds** manufacturers original size, follow Instruction VI.

C. When the actual **cost** of any multiple refill quantity is such that considered as a new prescription, it **still** would be priced by Instruction VII ($0.50 minimum), charge initial price of the original prescription plus $0.15 for each additional full multiple.

IX. In every case where calculated price is an odd number, adjust price to the next higher number divisible by 5.

(1) "Cost" means wholesalers price. **(2)** "Prevailing over counter price" applies only if specific item is actually so sold. Fair Trade minimum prices should not be considered as prevailing over counter prices **unless the specific item is actually so sold in the particular pharmacy.** **(3)** "Size." If more than one size is listed base price on cost of size nearest to quantity dispensed. **(4)** "Proprietary" means "Specialties," Trade-Marked Items, specified manufacturers products, and purchased ready-made items. **(5)** Determine price for metric quantities on basis of nearest apothecary equivalent.

The 27th Remington Medalist



ERNEST LITTLE

★★ ★★★★★★

DR. ERNEST LITTLE, Newark, N. J., past president of the AMERICAN PHARMACEUTICAL ASSOCIATION, professor of chemistry and former dean of Rutgers University College of Pharmacy, has been named the twenty-seventh Remington Medalist. In selecting Dr. Little, the Committee on Award announced that this distinction will be conferred "in recognition of his tireless efforts on behalf of pharmaceutical education; for his sane and intelligent attitude toward pharmacy in all its subdivisions; for his excellent handling of students who have come under his supervision; for his work in establishing A. PH. A. student branches and interesting them in the work of State and national pharmaceutical organizations; and for his great interest in the general welfare of pharmacy."

The Remington Medal Award is made by the New York Branch of the AMERICAN PHARMACEUTICAL ASSOCIATION. The 1949 presentation ceremonies and dinner will be held at the Hotel New Yorker on Tuesday evening, December 6.

The gold medal is given in commemoration of Joseph P. Remington, universally known pharmacist who was chairman of the U. S. P. Revision Committee for several decades and made many contributions to research, education and pharmaceutical literature. The honor is conferred upon the person whose work during the preceding year, or culminating over a period of years, is judged most important to American pharmacy by the Committee on Award, which consists of the past presidents of the AMERICAN PHARMACEUTICAL ASSOCIATION.

In citing Dr. Little's accomplishments, the Committee referred to him as "an able educator, organizer and teacher, who has devoted much of his professional life to the good of pharmacy in a most effective manner."

The 1949 Remington Medalist was born at Johnstown, N.Y., on June 9, 1888. His

undergraduate work was received at the University of Rochester where he received B.Sc. and M.S. degrees. He completed his graduate work at Columbia University, receiving M.A. and Ph.D. degrees from that institution. Since then, Dr. Little has received honorary doctorates from the Philadelphia College of Pharmacy and Science, Temple University, and Rutgers University.

Dr. Little's professional career has been closely identified with pharmacy. After a few years' teaching at the University of Rochester and at Pratt Institute, he was named Associate Professor of Chemistry at Rutgers University in New Brunswick, N. J. He also joined the staff of the New Jersey College of Pharmacy (now a part of Rutgers University) in 1918, and has been with that institution ever since. In 1926 he was made dean of Rutgers University College of Pharmacy, a position he held for 20 years.

A member of the AMERICAN PHARMACEUTICAL ASSOCIATION since 1924, Dr. Little has been unusually active in A. PH. A. affairs. He is immediate past president of the Association and a member of the A. PH. A. Council.

As president of the American Association of Colleges of Pharmacy and as chairman of its executive committee, Dr. Little was responsible for inaugurating numerous programs and activities which contributed to the rapid progress of pharmaceutical education.

Dr. Little served as president of the American Foundation for Pharmaceutical Education for two years, and is now a member of its Board of Grants. He has been a potent factor in the growth and development of the Foundation and has devoted special interest to the Foundation's graduate fellowship program.

For several years Dr. Little served as a member of the American Council on Pharmaceutical Education, playing a dominant part in working out its accreditation policies and techniques. He served one term as vice-president of that group.

Dr. Little has been a member of the board of trustees of the New Jersey Pharmaceutical Association and president of the Northern New Jersey Branch of the A. PH. A.

From 1930 to 1940, Dr. Little was a member of the U. S. P. Revision Committee. Since that time he has been a member of the U. S. P. Board of Trustees, taking a very active part in the important work which that organization carries on.

Dr. Little is a member of Phi Beta Kappa, Rho Chi, Phi Lambda Upsilon, Sigma Xi, Delta Sigma Theta, Alpha Zeta Omega, and Kappa Psi.

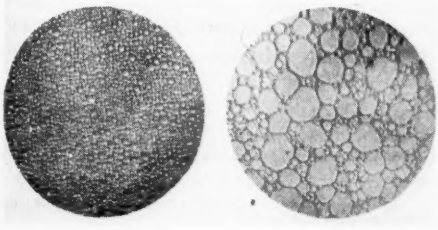
DESIGN FOR MORTAR AND PESTLE

(Continued from Page 421)

University of Maryland. Primary emulsions were made of mineral oil heavy, Acacia, and water. As mentioned before, the emulsion was made with little effort in the new type mortar and pestle, but with the conventional type the writer accomplished it with difficulty. A photomicrograph shown below is self-explanatory.

Emulsions Made With Both Types of Mortars

New Type *Conventional Type*



In compounding prescriptions with several ingredients such as aspirin 1 dram, acetpheneditin $^1/_2$ dram, codeine sulfate 3 grains, and extract belladonna 1 grain, the procedure is not as complicated as heretofore. The four ingredients are placed in the new type mortar in any order and triturated. With very little effort an excellent mixture is obtained with extract belladonna well distributed leaving no lumps or streaks.

In conclusion, the use of the mortar and pestle has been traced back as far as Old Testament history. In the Book of Numbers we read, "and the people went about and gathered manna and ground it in mills or beat it in a mortar and baked it in pans and made cakes of it." The conventional type mortar and pestle from that day until now has served us well. However, data presented herein show that a mortar and pestle made according to the new design will more efficiently serve the routine needs of the pharmacist.

CETYL ALCOHOL COMBINATIONS AS SUSPENDING AGENTS IN LOTIONS*

S. J. DEAN, D. C. BRODIE and D. P. CHIN

DURING recent years, considerable attention has been directed toward the development and improvement of vehicles for externally applied medication. This is particularly true in the case of ointments, and it is noteworthy that considerable progress has been made in the field of washable bases. At the same time little interest has been created in the case of medicated lotions. This is particularly striking in view of the product development and excellence attained in commercially produced cosmetic lotions.

The work herein reported was prompted by a need for improvement in stability, chemical compatibility, ease of preparation, and general tactile acceptability of medicinal lotions.

Improvement in the physical properties of calamine lotion was obtained in the formula of the N. F. VII[1] by the addition of bentonite magma. Nadkarni and Zopf[2] have recently reviewed the history of calamine lotion and, after studying a large number of suspending agents, have recommended the use of polyethylene glycols in improving the stability and general acceptance of this preparation.

The production of calamine lotion in the University of California Hospital Pharmacy Manufacturing Unit since 1941 has provided certain pharmaceutical problems because of batch variation encountered in bentonite-suspended lotions. A lotion of titanium dioxide[3] suspended with bentonite presented a similar problem. When carboxymethylcellulose in concentrations of 5% was used in place of bentonite magma, considerable suspending quality was provided, but the product had a tendency to form a tenacious film on the surface of the container. Furthermore, a tendency to separate into layers of calamine and zinc oxide was observed. Nadkarni and Zopf[2] reported a similar observation with methylcellulose when used in Calamine Lotion U. S. P.

The works of Goodman and Suess,[4] Bamber[5] and Soulsby[6] on the formulation of ointment bases containing mixtures of cetyl and stearyl alcohols in combination with sodium lauryl sulfate, and the enthusiastic acceptance of them in this area, suggested the possibility of the use of a similar combination in lotion formulation. A wide range of *p*H stability has been reported with this type of combination.[7,8] Formulation studies were made on Calamine Lotion U. S. P., Titanium Dioxide Lotion, University of California Hospital Formulary, and White Lotion N. F.

Experimental

Various combinations of cetyl alcohol, stearyl alcohol and sodium lauryl sulfate were used as suspension stabilizers. However, it was observed that the presence of stearyl alcohol imparted an undesirable granular texture to the lotions which was overcome when this alcohol was omitted. The most satisfactory combination was a cetyl alcohol stabilizer† which had the following composition and was prepared as described below:

Cetyl alcohol	36 Gm.
Sodium lauryl sulfate	4 Gm.
Distilled water, *q. s.*	1000 cc.

* A contribution from the Manufacturing Unit of the University of California College of Pharmacy, The Medical Center, San Francisco 22, California. Presented before the Practical Pharmacy Section of the AMERICAN PHARMACEUTICAL ASSOCIATION, San Francisco, California, August, 1948.

† Subsequent reference to this stabilizer will be indicated by the abbreviation C. A. E.

Melt the cetyl alcohol on a water bath. Dissolve the sodium lauryl sulfate in 900 cc. of distilled water and heat to 55° C. Add the lauryl sulfate to the melted alcohol with constant stirring and allow to cool with intermittent stirring. A viscous, translucent liquid is formed.

This product is sufficiently stable at room temperature so that it may be prepared and stored for extemporaneous use.

Calamine Lotion

Calamine lotion was prepared according to the U. S. P. specifications[9] with the exception that 40 cc. of C. A. E. replaced the 40 cc. of bentonite magma in 100 cc. of lotion. There was no significant change in *p*H (10.9–11.2) when this lotion was compared with the official preparation. The settling rate of the two preparations was observed in 100-cc. glass-stoppered graduated cylinders at room temperature with the following results:

Number of Days	U. S. P. Lotion, cc.	C. A. E. Lotion, cc.
1	2	0
2	2.5	0
3	3	0
4	3	0
6	4	0.5
8	5	0.5
10	6	0.5
12	8	0.5
25	26	2.0

When the lotions were stored for 10 days at 50° C. a separation of the suspension occurred. However, upon shaking and cooling to room temperature stable suspensions were re-established.

The extemporaneous addition of 1% phenol for the preparation of Phenolated Calamine Lotion N. F. was possible without affecting the stability of the lotion. The addition of benzyl alcohol in concentrations of 1% to 4% inclusive, produced a noticeable increase in viscosity. Concentrations above 4% caused a cracking of the lotion.

Titanium Dioxide Lotion

A special titanium dioxide lotion has been used in the University of California Hospital for a number of years as an alternate preparation for calamine lotion (3). This product contains 16% zinc oxide and 3.2% titanium dioxide suspended by bentonite magma. Similar formulation problems to those observed with calamine lotion have been encountered, and it has been found expedient to use C. A. E. in overcoming these objections. Replacement of bentonite magma with 40 cc. of C. A. E. produced the same general improvements as noted in the case of calamine lotion.

White Lotion N. F.

White Lotion N. F. is a combination of sulfides and elemental sulfur which is sometimes desirable in dermatologic therapy. The particles in the official preparation do not remain uniformly dispersed but exhibit a tendency to aggregate, particularly on standing. Furthermore the spreading qualities of the lotion might be improved by utilization of available surface-active agents. The lotion was modified in the following manner:

> Four grams each of zinc sulfate and sulfurated potash were dissolved in 25 cc. of distilled water as directed in the N. F. Thirty-five cc. of C. A. E. was added to the zinc sulfate solution and to this mixture the sulfurated potash solution was added with constant stirring. Sufficient water was added to make 100 cc.

The resulting lotion was uniformly suspended with no evidence of settling even after forty-five days of storage. During this period no evidence of discoloration or decomposition was observed. Considerable improvement in the spreading properties of the lotion was noted.

Summary

Cetyl alcohol–sodium lauryl sulfate combinations offer suitable agents for improving the stability and skin qualities of suspended medicated lotions. The use of the C. A. E. suspending agent as herein described has been applied successfully to Calamine Lotion U. S. P., Titanium Dioxide Lotion, University of California Hospital Formulary, and White Lotion N. F. and undoubtedly can be applied to other combinations. The fact that the C. A. E. stabilizer has suitable keeping qualities makes this agent available for extemporaneous use in prescription and formulation work.

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the public's health--

your first concern

SUSPECTING CANCER, No. 13 in a Series. . . . . .

This chart is a guide to the usual signs and symptoms of the most common types of cancer. Whenever a patron brings any of them to your attention, urge him to visit his physician. They do not mean cancer in all cases. But, if the condition is cancer, self-medication and delay may be fatal. It is suggested that the chart be torn out and posted in the prescription room as a permanent reminder. When you hear of these signs and symptoms—Suspect Cancer!

CARDINAL SIGNS AND SYMPTOMS OF CANCER

Bladder, Kidney and Prostate

Blood in urine. Painful or difficult urination.

Frequent and difficult urination. In some cases, pain in the lower part of the back.

Breast

Most frequent early sign is a small lump, usually painless. Later there may be bleeding from the nipple; deformity or deviation from normal shape of the breast; inversion or retraction of the nipple; skin attachment over the tumor, resulting in depression or dimple; swelling of lymph nodes in armpit.

Cancer in Children

An abnormal rate of growth or asymmetrical growth of a body part. Persistent aches and pains. A chronic, non-healing swelling or lump, with or without pain.

Female Reproductive System

Vaginal bleeding between regular menstrual periods or after the end of menopause. (Women over 35 should have pelvic examinations twice a year by a physician.)

Intestinal Tract and Rectum

Unexplained sudden cramps or sharp pains in the abdomen, or general discomfort. May be accompanied by gas, abdominal distension, and changes in bowel habits. Later symptoms may include bleeding, weakness and other signs of anemia, and loss of weight.

An unexplained change in bowel habits that persists two weeks or more. A sense of fullness or discomfort not relieved by bowel movement. Bleeding from the rectum. (Often wrongly attributed to hemorrhoids.)

Larynx and Lung

Slight or intermittent hoarseness persisting for several weeks or longer. In some cases, a distressing tickling sensation in the throat—continuous need to clear the throat—a constant lump in the throat.

Persistent cough, especially a change in coughing habits. Later, loss of weight, and pain—sometimes a sharp pain after coughing, or a dull ache or persistent feeling of discomfort deep in the chest.

Mouth, Tongue and Lip

Small, hard nodule, ulcer, or fissure that fails to heal in several weeks. A white, patchy thickening of the lining of the mouth or tongue (leukoplakia) may be a prelude to cancer.

Skin

Skin sore or lesion that does not heal. Often appears as a small, firm nodule or thickening. Sometimes begins as a horny wart which, although not painful, has a tendency to itch. Any dark brown or blue-black mole that increases in size or changes in color should be examined by a physician.

Stomach

Persistent or chronic indigestion is the commonest symptom. Any digestive disturbance that lasts for two weeks or more—heartburn, nausea, loss of appetite, distaste for meat or other foods, or difficulty in swallowing foods. Unexplained weight loss, a later symptom, must never be ignored.

science news capsules

CHLOROPHYLL tooth paste has been reported as a possible preventive of tooth decay. Tests showing a drop in the number of *lactobacillus acidophilus* organisms following the use of this paste were reported by Dr. Gustav W. Rapp of Loyola University, Chicago College of Dental Surgery, at a recent meeting of the International Association for Dental Research held in Chicago.

ANILINE dyes used to mark diapers may cause serious poisoning in babies (*J. Am. Med. Assoc.*, **140:** 684, 1949). Seventy-two cases of poisoning, including five deaths, have been reported. The danger can be prevented, by boiling the diapers after they are stamped and drying thoroughly before use. This fixes the dye so that absorption does not occur.

AUREOMYCIN is now being used successfully to treat amebic dysentery, shingles, and pemphigus, the latter a little-known disease that starts with a skin eruption like that of shingles. Considered most significant are the favorable results in amebic dysentery which Drs. L. V. McVay, R. L. Laird, and D. H. Sprunt of the University of Tennessee and the John Gaston Hospital, Memphis, report in the June 10 issue of *Science*.

ARTERIOSCLEROSIS may result as a lack of one of the B vitamins, pyridoxine, according to Drs. J. F. Rinehart and L. D. Greenberg of San Francisco in a report presented at a meeting of the American Heart Association. Studies over a three-year period involving the use of monkeys gave "most suggestive evidence" for pyridoxine deficiency being concerned in artery hardening, the doctors reported.

GLASS APRONS, made from a heavy, silky material known as "lead fiberglass," have been found by Dr. Vincent W. Archer and associates of the University of Virginia to give better protection against X-rays than the lead-impregnated rubber aprons now being used by technicians. Production of the new aprons is now in the pilot plant stage. Use of the material as clothing for rescue workers going into "hot areas" following atomic bomb bursts also is being studied.

ISOLATION from human saliva of a biologically active fraction which may be effective in the prevention of dental decay has been reported by T. J. Hill, D.D.S., and associates of the School of Dentistry, Western Reserve University (*J. Am. Dent. Assoc.*, **38:** 656, 1949). Preliminary laboratory tests have revealed that the extract has a retarding effect in the production of mouth acids. The exact nature of the extract has not as yet been determined.

PROBING THE BRAIN with a miniature Geiger-Muller counter will help surgeons locate more accurately deeply buried tumors, Drs. B. Selverstone, A. K. Solomon, and W. H. Sweet of the Massachusetts General Hospital and the Harvard Medical School have reported. Patients suspected of having brain tumors are given injections of radioactive phosphorus from approximately two hours to three days before operation. Tumor tissue concentrates the radioactive phosphorus.

NEW EVIDENCE for the effectiveness of vitamin B_{12} in the treatment of pernicious anemia was reported to the California Medical Association's recent meeting by Dr. Stacy R. Mettier, professor of medicine in the University of California Medical School, as a result of recent studies. Doses of the vitamin returned the red blood cell count to within normal range in 60 days. Cellular structure of the bone marrow also returned to normal.

TOLSEROL is helping mentally ill patients to relax and sleep normally. Louis S. Schlan, M.D., of the Manteno (Ill.) State Hospital and Klaus R. Unna, M.D., University of Illinois College of Medicine, have reported (*J. Am. Med. Assoc.*, **140:** 672, 1949) that beneficial results were obtained from the treatment of 63 patients suffering from anxiety. All of the patients had been under observation for a long period and many had been treated with electric shock, insulin shock, and carbon dioxide.

RADAR WAVES may be of help in the future treatment of arthritis, bursitis and muscle inflammation. Dr. Khalil J. Wakin and associates of the Mayo Clinic report (*J. Am. Med. Assoc.*, **139:** 989 (1949) that fair to excellent improvement was shown in 70 cases after application of the waves.

CONTACT LENSES will not take the place of spectacles in most cases in which ordinary eye glasses give serviceable vision, according to Dr. Conrad Borens, ophthalmologist and member of the American Committee on Optics and Visual Physiology. Chief complaints from wearers of contact lenses include the limited time that most persons can tolerate wearing the lenses, clouding of the solution used, and the expense.

ASSOCIATIONS

At their 43rd annual convention in Pasadena, July 12–15, members of the **California Pharmaceutical Association** elected Fred P. Beretta of Oakland, president, and John A. Foley of Berkeley, vice-president. Among the principal speakers were: John Dargavel, secretary, N. A. R. D., and Troy C. Daniels, dean of the College of Pharmacy, University of California.

Newly elected officers of the **Northern New York Pharmaceutical Association** are: George L. Rogers, Antwerp, president; Walter Russell, Canton, vice-president; Ross W. Kinnie, Watertown, secretary; and Newton Wheeler, Lacona, treasurer.

Officers of the **Minnesota State Pharmaceutical Association,** who will take office at the 1950 convention, are: Charles V. Netz, University of Minnesota College of Pharmacy, president; Sam S. Grais of St. Paul, Kermit C. Mattison of Minneapolis, and Joseph T. Falk of Duluth, vice-presidents; Willard J. Hadley, Minneapolis, secretary; Charles T. Heller, Jr., St. Paul, treasurer; and C. A. Borgstrom, St. Paul, executive committee member.

The 59th annual convention of the **Montana State Pharmaceutical Association** was held in Butte, June 24 to 25. The principal speaker at the closing banquet on June 25 was A. Ph. A. Secretary Robert P. Fischelis.

Speakers at the 67th annual meeting and convention of the **Maryland Pharmaceutical Association** held at Ocean City, Md., June 28 to 30, included Edgar S. Bellis, president, N. A. R. D.; Robert L. Swain, editor, *Drug Topics;* James DeFree, H. A. B. Dunning, John A. MacCartney and James S. Hill.

C. M. Nielsen, Tucson, was elected president of the **Arizona Pharmaceutical Association** for the coming year, at the 24th Annual Convention held recently in Phoenix. Other officers named were: C. E. Heacock, Phoenix, first vice-president; John Caldwell, Lowell, second vice-president; Newell Stewart, Phoenix, secretary; and Mike Harris, Phoenix, treasurer. The Association called on the University of Arizona to "assume leadership in progressive pharmaceutical education in the United States" by requiring two years of preparatory study before entering the pharmacy college, and offering a doctor's degree after completion of a six-year course. A committee was selected to see that a bill is placed before the 1951 state legislature to set up controls on dispensation of dangerous drugs. The group reiterated its stand against lewd comic books and opposed compulsory health insurance.

The **Massachusetts State Pharmaceutical Association** opened its 68th annual convention on June 12 at New Ocean House, Swampscott, Mass. Speakers included: Timothy S. Shea, Worcester, president of the Board of Registration in Pharmacy; Dean Howard C. Newton, Massachusetts College of Pharmacy; Paul A. Dever, Governor of Massachusetts; George D. Verallis, Springfield, president of the Association; John F. Conlin, director of medical information, Massachusetts Medical Society; Bernard Zerbe, managing editor, *American Druggist;* and E. Murphy Josey, Frankfort, Ky., secretary of the Kentucky Pharmaceutical Association. Officers elected at the annual meeting were: Harry E. Damesick, Lowell; Samuel Friedman, Roxbury, and William Blair, Great Barrington, vice-presidents; Martin Adamo, Boston, treasurer; Frank East, West Roxbury, recording secretary; and Samuel Silverman, Boston, executive secretary. This year's convention was under the direction of Martin E. Adamo, A. PH. A. Council member, who was recently honored by the Rhode Island College of Pharmacy with a doctorate of pharmacy.

At Shore Lodge, McCall, Idaho, the **Idaho State Pharmaceutical Association** held its 43rd annual convention June 19 to 21. A. PH A. Secretary Robert P. Fischelis, Bert R. Mull, director of public relations, Eli Lilly and Co., Charles Lanwermeyer, pharmacist in charge of research, Abbott Laboratories, and Dean Emmons E. Roscoe, Idaho State College of Pharmacy, were among the principal speakers.

Herman H. North of Bloomfield was elected president of the **New Jersey Pharmaceutical Association** at its 79th annual convention held in Atlantic City in June. Edward A. Thorne of Princeton was elected first vice-president and Harry P. Margulies, second vice-president. Latest developments in the fields of antibiotic therapy, folic acid and other scientific and professional problems were outlined during the sessions by: W. F. Verwey, director of bacteriologic research for Sharp & Dohme, Inc., Philadelphia; James Smith, Jr., of Calco Chemical Co., Bound Brook, and Tom D. Rowe, dean of Rutgers University College of Pharmacy.

Frank Emma, president of the **New York State Pharmaceutical Association,** and Nicholas Geso-

alde, secretary of the State association, spoke to members of the **Finger Lakes Pharmaceutical Association** on May 5. Movies on new research in the pharmaceutical field were shown.

The model drugstore of 1950—the epitome of modern merchandising—was the feature of the **New York State Pharmaceutical Association's** 71st annual convention held at Lake George June 12 through 17. This unit was specifically designed to combat the infiltration of grocers and supermarkets into the pharmacists' province of the packaged sundries field. At the close of the session the following officers were elected for the coming year: Frederick Stevens, Brooklyn, president; Samuel Dreyer, Pelham, first vice-president; Jacob J. Goldberg, Queens, second vice-president; Hyman Mandell, Rochester, third vice-president. Edgar S. Bellis, Bronxville, and Nicholas S. Gesoalde, New York City, were re-elected treasurer and secretary, respectively.

Principal speakers at the 62nd annual meeting of the **Tennessee Pharmaceutical Association** at Memphis, June 21 to 23, were Dr. Glenn L. Jenkins, president of the AMERICAN PHARMACEUTICAL ASSOCIATION; John A. MacCartney, manager, trade relations department, Parke, Davis & Co.

Officers of the **District of Columbia Pharmaceutical Association** elected for the 1949–50 term are: Samuel W. Stewart, president; Frederick C. Schultz, first vice-president; Leon L. Cohen, second vice-president; Charles W. Bliven, third vice-president; F. Royce Franzoni, fourth vice-president; Harold C. Kinner, secretary; Roger W. Lusby, treasurer.

The **Louisiana State Pharmaceutical Association's** 67th annual convention was held in Baton Rouge the week end of May 22. Principal speaker at the session was John A. MacCartney, manager of trade relations for Parke, Davis & Co. Officers installed for the coming year were: Redfield E. Bryan, Baton Rouge, president; Ronald L. Macke, secretary; Milton DeRouen, treasurer; and Alfred Trahan, corresponding secretary—all of New Orleans.

The 70th annual convention of the **Ohio State Pharmaceutical Association** is being held from July 17 to 21 in Toledo. The program includes a seminar featuring Robert L. Swain, editor, *Drug Topics;* Paul C. Olsen, Philadelphia College of Pharmacy and Science; H. W. Adkins, Yahr Lange, Inc.; with Bert R. Mull, Eli Lilly & Co., acting as moderator. Problems relating to merchandise, management, professional pharmacy, economics, fair trade, etc., will be discussed. George H. Frates, N. A. R. D. representative in Washington, D. C., will report on national legislation and John A. MacCartney will discuss "Good Customers Don't Complain—They Just Don't Come Back." Films on fair trade by Miles Laboratories and modern drug store operation by Owens-Illinois Glass Co. are scheduled. The Toledo University College of Pharmacy will present "Pharmacy of Tomorrow."

COLLEGES

The motion picture, "Toward Better Pharmacy," was shown at the Senior Seminar, May 11, at the **University of Buffalo School of Pharmacy.** The Academy of Pharmacy Prize was awarded to Robert J. McIsaac and Eugene H. Kowalski, both 1949 graduates. John W. Kleber, who receives his Ph.D. degree from the University of Minnesota this summer, has been appointed assistant professor of pharmacy at the University of Buffalo, effective September 1.

James S. Hill, drug marketing and merchandising instructor at the University of Buffalo, addressed the group attending the Annual Spring Refresher Course for pharmacists at **Massachusetts College of Pharmacy** May 12. His topic was "Pharmacy Is As Pharmacy Does."

At the 128th commencement exercises of the **Philadelphia College of Pharmacy and Science** on June 13, honorary degrees of Doctor of Science were awarded to William B. Bell, president of American Cyanamid Co.; E. Fullerton Cook, chairman of the Revision Committee of the U. S. Pharmacopœia; Freeman P. Stroup, professor of pharmaceutical chemistry at the College; and John S. Zinsser, chairman of the board of Sharp and Dohme, Inc.

Dr. Wortley F. Rudd, dean emeritus of the **Medical College of Virginia School of Pharmacy,** was awarded an honorary degree of Doctor of Science at the commencement exercises of the College on June 7.

Dean Earl R. Serles of the **University of Illinois College of Pharmacy** has announced that Jack C. Mitchell of Albion has been named the winner of the Borden Scholarship. The $300 scholarship is awarded annually by the Borden Company to the junior student in the College of Pharmacy attaining the highest scholastic average. Dean Serles also announced the Herman Elich prize was awarded to Edward J. Walaszek of Chicago, who had the highest average in pharmacognosy, and the Van Schaack Award was won by Elaine M. Gianas of Chicago for maintaining the highest average in chemistry during the four-year pharmacy course.

Dr. Ivor Griffith, president of the **Philadelphia College of Pharmacy and Science,** addressed the graduates of the **Albany College of Pharmacy, Albany, N. Y.,** at commencement exercises on June 9. Robert H. Heeley, Oriskany, the valedictorian, was awarded the William W. Gibson prize for

(Continued on Page 436)

1949 PLANT SCIENCE SEMINAR PROGRAM

THE 1949 Plant Science Seminar will be held at the University of Wisconsin School of Pharmacy at Madison, Wis., from August 21 to 27. All persons interested in pharmaceutical botany, pharmacognosy, plant chemistry, pharmacology, and related subjects are invited to attend the Plant Science Seminar regardless of whether they are teachers, research workers, retail pharmacists, manufacturers, representatives, or in other phases of the sciences, according to an announcement issued by the Local Committee and the officers of the Seminar.

The announcement states that "Dr. Joseph V. Swintosky, in collaboration with Director Arthur H. Uhl and other members of the Local Committee, has arranged an excellent program which includes scientific papers, lectures, laboratory demonstrations, botanizing trips, tours to research laboratories, and all the other features which highlight the Seminar meetings."

The Seminar will convene on Monday morning, August 22, with a business session at the School of Pharmacy. Following luncheon on the grounds of the School, the afternoon session will be devoted to a tour of the School and the presentation of scientific papers by staff members of the University of Wisconsin.

At the Tuesday morning session, August 23, Dr. Ralph F. Voight, of the University of Illinois College of Pharmacy, will present a report of the Herbarium Committee of the American Academy of Allergy and will review some of the newer studies on pollen grains. John E. Seybert, botanist of Eli Lilly and Co., will discuss the technical phase of methods of determining insect infestation in plant and animal drugs. Following a box luncheon, the Tuesday afternoon session will be given over to a tour of the University of Wisconsin campus.

The Wednesday, August 24, sessions will be devoted to an all-day trip to Devil's Lake State Park and to the Wisconsin Dells. This excursion will be for botanizing and sightseeing.

Papers and demonstrations on the subject of plant growth regulators, antibiotics and tracer techniques applied to plant studies have been planned for the Thursday morning session, August 25. Following a box luncheon, the afternoon session will be taken up by tours of the Forest Products and the Wisconsin Alumni Research Foundation Laboratories. That evening motion picture films of past Seminars will be shown.

The Friday morning session, August 26, will be turned over to a panel discussion on methods of presenting laboratory work in pharmacognosy in relation to the biochemical consideration of crude drugs and plant and animal products. The annual banquet will be held Friday night, after which the group will hear an illustrated lecture, "The Story of the Search for Cinchona in South America during World War II."

With the final business session Saturday morning, August 27, the Seminar will come to a close. This session will include reports of committees and the election of officers.

For further information concerning the Plant Science Seminar, write Dr. Joseph V. Swintosky, University of Wisconsin, School of Pharmacy, Madison 6, Wis.

COLLEGES

(Continued from Page 435)

highest standing in all branches of the course, and the Albany Pharmaceutical Association prize for general excellency in pharmacy. The Alumni Association prize for the second highest standing was awarded to Robert L. Hosler of Syracuse, who also received the Merck & Co. award for general excellency in chemistry. Other prize winners were: Erich Katz, Merck & Co., award for general excellency in pharmacology; Richard F. Isele, a year's membership in the State Pharmaceutical Association; Kenneth I. Colville, a Kappa Psi Fraternity Key, given by Beta Delta Chapter to its graduating member with the highest standing in all branches; and Shirley I. Clark, a Lambda Kappa Sigma Sorority Key, given by Beta Chapter to its graduating member with the highest standing in all branches. At the commencement dinner it was announced that the library under construction at the college will be furnished as a testimonial to Dean O'Brien. Willard K. Barton, president of the Albany Pharmaceutical Association, presented a plaque to the dean commemorating the fact.

The executive committee and the board of trustees of **Western Reserve University** voted on June 14 to discontinue the university's current undergraduate and graduate programs in pharmacy as of June 30, 1949. The action was taken because the university was unable to find sufficient financial support to continue the School of Pharmacy on a high professional level.

The two top-ranking graduates of the **University of Nebraska College of Pharmacy** were Varro E. Tyler, Jr., of Nebraska City and Carl M. Glen, Jr., of Auburn, who were presented with the Lehn and Fink medal and the Merck and Co. Award, respectively.

The silver anniversary reunion and dinner of the Class of 1924, **Pittsburgh College of Pharmacy**, was observed on June 16. With most of the original faculty and students present, it was the largest reunion held by an alumni group of the school. The

Members of A. Ph. A.'s Mission to Japan pictured above are (left to right): Dr. Glenn L. Jenkins, A. Ph. A. President and dean of the School of Pharmacy, Purdue University; Dr. Hugh C. Muldoon, dean of the School of Pharmacy, Duquesne University; Dr. Troy C. Daniels, dean of the College of Pharmacy, University of California; Don E. Francke, chief pharmacist, University of Michigan Hospital; and F. Royce Franzoni, vice-president of the National Association of Boards of Pharmacy and member of the District of Columbia Board of Pharmacy.

A. Ph. A. Mission to Japan

FIVE members of the AMERICAN PHARMACEUTICAL ASSOCIATION are in Japan studying the Japanese pharmaceutical industry at the request of Headquarters, Supreme Commander for the Allied Powers. The group left the United States on June 27 and are expected to return around August 1.

While in Japan, the mission will examine Japanese pharmaceutical education and licensing systems. The American pharmacists also will review the progress made in the rehabilitation of the Japanese pharmaceutical industry, offer advice and recommendations for raising the standards of Japanese pharmaceutical educational requirements, and give their views on the organization and functions of a pharmaceutical association for Japan.

The Japanese mission is headed by Dr. Glenn L. Jenkins, A. PH. A. President and dean of the School of Pharmacy, Purdue University, and includes Dr. Hugh C. Muldoon, dean of the School of Pharmacy, Duquesne University; Dr. Troy C. Daniels, dean of the College of Pharmacy, University of California; Don E. Francke, chief pharmacist, University of Michigan Hospital; and F. Royce Franzoni, vice-president of the National Association of Boards of Pharmacy and member of the District of Columbia Board of Pharmacy.

Prior to leaving for Japan, the group, with the exception of Dr. Daniels who was unable to attend, met at ASSOCIATION headquarters in Washington and conferred with Brig. Gen. Crawford F. Sams, chief of the Public Health and Welfare Section, Supreme Commander for the Allied Powers, and A. PH. A. Secretary Robert P. Fischelis, concerning the objectives of the trip.

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trustees of the University of Pittsburgh recently gave a dinner in celebration of the merger of the **Pittsburgh College of Pharmacy** with the university as a school of pharmacy. Dr. Edward C. Reif, dean of the school of pharmacy, who presided at the dinner, stressed the historical development of the school of pharmacy which in its early beginnings was housed in a university building, although not affiliated with the university. Dr. Edward C. Elliott, director of the Pharmaceutical Survey, was the principal speaker at the dinner. He discussed the Pharmaceutical Survey as to its origin, its early development, its fact-finding activities, the interpretation of these data, its role in the establishment of new horizons for pharmaceutical education, its conclusions and recommendations, and its role in the implementation of these recommendations into actualities.

HOSPITAL PHARMACY

Recently elected officers of the **Cleveland Society of Hospital Pharmacists** are: president, Alma L. Robertson, St. Luke's Hospital; vice-president, Gabriel H. Brown, Cleveland State Hospital; recording secretary, Esther Falzine, Cleveland City Hospital; corresponding secretary, Edward Paley, U. S. Marine Hospital; and treasurer, Dorothy Ellis, University Hospitals.

New officers of the Pharmacy Section of the **Tri-State Hospital Assembly** are: chairman, Louis Lester, Harper Hospital, Detroit, Mich., and secretary, Sister Cunigundis, St. Vincent Hospital, Green Bay, Wis. The Assembly held its annual meeting in Chicago, Ill., May 3 and 4. Sister M. Stephanina, Administrator, St. Anthony's Hospital, Terre Haute, Ind., was in charge of the pharmacy section.

LOCAL BRANCHES

MEMBERS of the **Northwestern Ohio Branch** heard K. L. Milstead, Chief of the Cincinnati District, Food and Drug Administration, discuss "Prescription Legend Items and Their Refilling" at the June meeting. The group will not meet again until September. Carlton J. Siegel was elected president for the coming year, and Walding G. Rupp, secretary.

The following new officers were elected at a recent meeting of the **Philadelphia Branch:** Robert L. McNeil, Jr., president; Paul W. Wilcox, first vice-president; Harold A. Clymer, second vice-president; Joseph B. Sprowls, secretary-treasurer; Linwood F. Tice, delegate.

The May meeting of the **Northern Ohio Branch** was of a nontechnical nature. T. C. Hantelman, world traveler and foreign adviser to industry, spoke on "The American Way." Carmen Minardi, senior student of the Western Reserve University Pharmacy School, entertained with his accordion.

Dr. H. Corwin Hinshaw, clinical professor of medicine at Stanford University, spoke on "Recent Developments in Antibiotic Research" at the June meeting of the **Northern California Branch.** This was the last meeting of the group until September.

STUDENT BRANCHES

At the May 19 meeting, Dr. Haakon Bang showed members of the **State College of Washington Branch,** colored slides of the trip made by the juniors and seniors to Eli Lilly and Co., Parke, Davis & Co., Upjohn, and Abbott Laboratories. On May 25 the Branch elected the following officers for the 1949–50 school year: Ronald Doane, president; Gayle Harris, vice-president; Haakon Bang, secretary-treasurer; and Carol Anderson, reporter.

The **Fordham University Branch** held its last meeting of the current season on April 27 and announced that meetings of the branch would be resumed again this coming September, at which time there will be an election of officers.

The first annual banquet of the **University of Wyoming Branch** was held on May 11. University President George D. Humphrey was guest speaker. Shirley Logan of Jackson, Wyo., was presented with the JUNIOR AMERICAN PHARMACEUTICAL ASSOCIATION honor book as the outstanding freshman in the college.

The **Purdue University Branch** has elected the following officers for the coming year: John J. Dougherty, president; Jack Knox, vice-president; Margie Andersen, secretary; Frank Knox, treasurer; and Henry Bikin, faculty adviser. During the past school year several forums have been held in which both students and faculty members took an active part in the discussion of such topics as teaching methods and techniques and the proposed six-year plan of study for pharmacy. The year's activities came to a close with a picnic early in June.

Officers of the **University of Buffalo Branch** elected for the 1949–50 school year are: George C. Barone, president; Harris F. Derby, vice-president; Betty S. Bryan, secretary; William S. McMahon, treasurer.

The annual pharmacy banquet, sponsored by the **University of Washington Branch** on May 6, was highlighted by the presentation of scholarships by Dean Forest Goodrich. Lois Lemon, past-president of the student branch, received the Charles W. Johnson Memorial Award; Norma Nielsen was awarded the Lehn and Fink Medal for having the highest scholastic average during the four years. Harold Buckley's name will be inscribed on the Linton Memorial for high scholarship and general excellence of character. A movie, "Inoculation against Infectious Diseases," was presented on May 17 and on May 29 a picnic was sponsored by the Branch as the final get-together of the school year.

The **Wayne University Branch** has elected the following officers for the 1949–50 school year: William Jevons, president; Vahagn Agbabian, vice-president; Audrey Sagoian, recording secretary; Bernadine Zak, corresponding secretary; Melvin F. W. Dunker, treasurer. The speaker at the May meeting of the Branch was Leon S. Lukaszewski, president of the Michigan State Board of Pharmacy.

Two educational films were shown at the May meeting of the **Oregon State College Branch** and plans were made for a picnic which was held later in the month.

The **University of Utah Branch** held its second annual installation dinner dance on May 28. On this occasion the College of Pharmacy was presented with a painting by Dr. Avard Fairbanks, dean of the College of Fine Arts of the University. Newly installed officers of the Branch are: Joseph D. Halgren, president; H. H. Kilroy, president-elect; Grant B. Fagg, vice-president; Anita Mae Allen, secretary; and Dr. Ewart Swinyard, treasurer.

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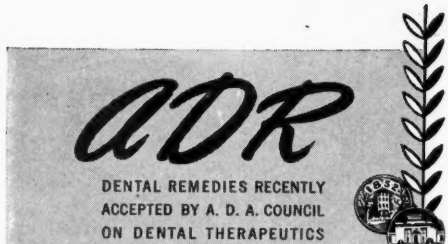

Admission to Accepted Dental Remedies *means that a product and the methods by which it was marketed at the time of consideration were not found to be in violation of the published rules of the Council on Dental Therapeutics. A summary of the rules appeared in This Journal, 7:153 (April), 1946. Accepted products are reconsidered periodically.*

ANTIBIOTICS[1]

Penicillin Sodium-Heyden: In 500,000-unit vials. Marketed by *Heyden Chemical Corp., New York.*

Penicillin Potassium Buffered Tablets (Soluble), 50,000 Units: Stated to contain crystalline penicillin G potassium, citric acid, sodium bicarbonate and sodium benzoate. In bottles of 12. Manufactured by *Abbott Laboratories, North Chicago, Ill.*

Pen-Troches, 1000 Units: Stated to contain crystalline penicillin potassium, calcium stearate, sugar and flavor. In bottles of 25.

Pen-Troches, 5000 Units: Stated to contain crystalline penicillin potassium, calcium stearate, sugar and flavor. In bottles of 25. Distributed by *Cutler Laboratories, Berkeley, Calif.*

ASTRINGENTS, HEMOSTATICS AND VASOCONSTRICTORS[2,3]

Oxidized Cellulose—Novocell.

Novocell Pellets: In sterile containers of 25. Manufactured by *Novocol Chemical Mfg. Co., Inc., Brooklyn, N. Y.*

QUATERNARY AMMONIUM COMPOUNDS[4]

Parker's Germicidal Tablets: Each 100 Gm. is stated to contain para di-isobutyl phenoxy ethoxy ethyl dimethyl benzyl ammonium chloride monohydrate, 12.5 Gm.; sodium nitrate, 41.1 Gm.; corn starch, 7.1 Gm.; sodium bicarbonate, 39.3 Gm.; magnesium stearate, 0.3 Gm., and color. In bottles of 40. Manufactured by the *A. J. Parker Company, Philadelphia, Pa.*

Radiol Germicidal Solution Concentrate: Each 100 Gm. is stated to contain cetyl ethyl dimethyl ammonium bromide, 1 Gm.; sodium bicarbonate, 1 Gm.; sodium nitrite, 1 Gm., and water. Manufactured by *Novocol Chemical Mfg. Co., Inc., Brooklyn, N. Y.*

PHENOLIC COMPOUNDS[5]

Sanford's Disinfecting Solution Formula B: Each 100 Gm. is stated to contain isopropyl alcohol, 70 Gm.; cresol, 2 Gm.; propylene glycol, 10 Gm.; pine oil emulsified with rosin soap, 1 Gm., and distilled water, 17 Gm. Marketed by *Formula Products Company, Los Angeles, Calif.*

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[1] See *Accepted Dental Remedies*, ed. 24, p. 59.
[2] See *Accepted Dental Remedies*, ed. 14, p. 103.
[3] Council on Dental Therapeutics, Council Lists Products for "Accepted Dental Remedies." *J. A. D. A.*, 37: 700 (Dec.), 1948.
[4] See *Accepted Dental Remedies*, ed. 14, p. 94.
[5] See *Accepted Dental Remedies*, ed. 14, p. 89.

MISCELLANEOUS THERAPEUTIC APPLICATIONS FOR SODIUM FLUORIDE IN DENTISTRY

The topical application of a paste consisting of equal parts of sodium fluoride, calcium carbonate and glycerin as a means of treating hypersensitive necks of teeth was suggested in the Russian daily newspaper, *Izvestia*, in 1937. An English translation of the article is available.[1] The author speculated concerning the mechanism by which desensitization occurred.

A 92-page report on the actions and uses of sodium fluoride, published originally in Russian in 1940, was condensed in English in 1945.[2]

In 1941 there appeared a report in English of a Russian investigation of the actions and uses of various preparations of sodium fluoride, most of them for topical application.[3] The investigator believed that sodium fluoride, when applied to dentin, would form a shallow, relatively dense, hard layer as a result of a chemical combination between the fluoride ion and the calcium in the dentin and that this layer would act as a barrier to the transmission of sensation and bacteria. He thought that desensitizing effects were not due to direct action on the dental pulp when the fluoride preparations were used as recommended.

Among the topical applications recommended by the Russian investigator in 1941 were:

1. Treatment and filling of root canals of pulpless teeth.
2. Treatment of the dentin exposed on the inner walls of teeth after the root canals have been filled.
3. As a dressing for amputated or extirpated pulp stumps.
4. As a protective filling material.
5. As an anesthetic prior to cavity preparation and as a desensitizing agent for dentin after cavity preparation.
6. As an external application to relieve hypersensitivity, especially on the cervical portion of the tooth.

The following topical uses were said to be contraindicated: (1) Application to deciduous teeth.

(2) Application to pulps which are exposed by caries. (3) Application in periodontosis in the presence of marked alveolar atrophy.

The article is somewhat disconnected and the data are not complete. It is a remarkable report, however. Apparently much work was done, and many fluoride preparations and methods of treatment were tested on a large number of patients.

In 1943, American investigators reported the results of a clinical study of the effects of topical fluoride preparations on "naturally occurring" sensitive dentin.[4] A 2% aqueous solution of sodium fluoride was found to produce slight obtunding effects. A 4% solution was more effective when applied repeatedly. Mixtures of sodium fluoride with china clay (kaolin) and glycerin were then tried, and a mixture of equal parts of the three ingredients was selected for a study on 70 patients. In order to rule out glycerin as an obtunding agent, 6 highly sensitive teeth were treated with a mixture of china clay and glycerin. Desensitization did not occur, but subsequent treatment of the same teeth with the fluoride paste was followed by desensitization.

The treatment method was described as follows:

After a preliminary cleaning with a pledget of cotton moistened with a 4% sodium fluoride solution, the area to be treated was isolated with cotton rolls, a pledget of cotton being used to remove free moisture. A small amount of 33% sodium fluoride paste was then taken on the end of a small plastic instrument and placed on the tooth. The paste was then rubbed vigorously on the sensitive surface of the tooth with the plastic instrument, with concentration on any areas where pain (sensation of refrigeration) was encountered. This was continued until all sensation disappeared, the time necessary ranging from one to five minutes. Occasionally, when pain became acute, the paste was washed off with a warm spray. In such instances, a second treatment was given immediately, without difficulty. When the pain disappeared, the cotton rolls were removed, and, at the same time, as much paste as possible was wiped off. This was followed by prompt washing with a spray bottle, and a thorough rinsing of the mouth by the patient.

Desensitization occurred in a very high percentage of the cases. The paste may be applied with an orangewood stick in a porte-polisher.

Reports of several investigators which tend to confirm the reported effectiveness of concentrated preparations of sodium fluoride in alleviating hypersensitive dentin have since appeared in the literature.[5-8] There have been two additional publications in Russian.[9,10] Estimates of the rate of absorption of fluoride by dentin have been reported.[3,11]

Fluoride paste has been found to be effective in desensitizing freshly cut dentin, during and following cavity preparation.[4] Several investigators have found that sodium fluoride sealed in freshly cut dentin will damage the pulp.[12-14]

Comment

The available evidence indicates that topical application of concentrated solutions of sodium fluoride or mixtures of sodium fluoride with glycerin, kaolin or calcium carbonate is effective in reducing the sensitivity of dentin, and that such mixtures may be applied briefly to the external surfaces of the teeth provided tooth substance is not cut away prior to the application of the fluoride and reasonable care is taken to avoid ingestion or prolonged contact with soft tissue.

Other dental uses of sodium fluoride, except topical application of 2% aqueous solution for the prevention of dental caries, are not yet supported by sufficient evidence to warrant their general adoption. The use of sodium fluoride in conjunction with cavity preparation or as an ingredient of filling material in vital teeth is contraindicated because of the possibility of damage to the pulp.

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INFORMATION SERVICE

Members of the American Pharmaceutical Association are invited to submit their professional problems to the Journal, 2215 Constitution Ave., N. W., Washington 7, D. C., giving all pertinent details. Advisory service is provided by the A. Ph. A. library and technical staff and the Journal panel of technical consultants.

STATUS OF SOLUTION OF POTASSIUM ARSENITE

I note that solution of potassium arsenite will appear in the N. F. IX. Is it to remain as a clear, colorless and unflavored solution or is it proposed to be again flavored and colored?—R. C., Pennsylvania

Potassium arsenite solution will not be included in U. S. P. XIV but it has been admitted to N. F. IX. It is planned to retain the same formula, etc., as is currently official in the Pharmacopœia.

HEXOBARBITAL

Can you advise me as to a source of Hexobarbital?—B. E., Arkansas

Hexobarbital is the name assigned by the Council on Pharmacy and Chemistry of the American Medical Association for Evipal, a product of Winthrop-Stearns, Inc., New York City.

REVISION OF U. S. P.

Is it true that the AMERICAN PHARMACEUTICAL ASSOCIATION *intends to revise and edit the U. S. Pharmacopœia every five years after 1940?—H. H., California*

The AMERICAN PHARMACEUTICAL ASSOCIATION publishes the National Formulary but not the United States Pharmacopœia. It is the intent, however, of both the National Formulary and the U. S. Pharmacopœia to publish a revision every five years. The last revisions of these books became official in 1947, and a new revision will be available in 1950. After 1950 both books hope to be on a 5-year schedule.

ZINC CHLORIDE MOUTH WASH

In preparing zinc chloride mouth wash in accordance with the formula published in "The Pharmaceutical Recipe Book, Second Ed.," we have experienced difficulty in obtaining a stable coloring with fuchsin. It seems that the addition of the flavoring oils and the subsequent filtration through talc changes the dye from a bright red to a purple, finally to a deep blue and complete precipitation.—H. K., South Carolina

Evidently the difficulty you describe concerning the use of basic fuchsin in this preparation has bothered others also, because the formula was modified in *The Pharmaceutical Recipe Book, Third Ed.*, to eliminate this dye. The current formula is the same except that soluble saccharin is used in place of saccharin and 8 cc. of amaranth solution is used in place of basic fuchsin. We believe that if you make these changes you will have an acceptable preparation.

TETRAETHYL PYROPHOSPHATE

Can you give us the properties, trade names, and source of tetraethyl pyrophosphate?—G. S., Texas

Tetraethyl pyrophosphate is described in the British journal, *Lancet*, for April 3, 1948,

(*Continued on Page 444*)

New A. Ph. A. Members

THE ASSOCIATION EXTENDS A CORDIAL WELCOME TO THE FOLLOWING MEN AND WOMEN WHO WERE ACCEPTED FOR ACTIVE MEMBERSHIP DURING THE MONTH PRECEDING PREPARATION OF THIS ISSUE.

ALABAMA

Carlisle, L. H., Alexander City
Legare, Lela I., Montgomery
Price, A. J., Montgomery
Wright, William W., Heflin

ARIZONA

Ferguson, Harry C., Tucson
Rohrer, Marvin E., Prescott

ARKANSAS

Hurie, Wiley Lin, Clarksville
Waddle, Allen L., Harrisburg

CALIFORNIA

Lach, Frederick C., Redondo Beach
Reynolds, Harry R., Glendale

COLORADA

Dickison, Walter L., Boulder
McCowan, James R., Boulder
Sarrazin, Jack, Denver

DISTRICT OF COLUMBIA

Barta, A. K., Washington
Hellerman, Rebecca C., Washington
Reimers, Harriette, Washington
Salamone, Lawrence Francis, Washington

FLORIDA

Alonso, Wesley J., St. Petersburg
Bullard, K. C., St. Augustine
Christian, R. L., Tallahassee
Cross, Irwin, Jacksonville
Crosson, Hugh S., Jacksonville
Crouch, William T., Quincy
Davis, Dan H., Fort Lauderdale
Fenters, George L., Jr., Jacksonville
Hardman, Thom, Jacksonville
Morgenroth, Victor H., Jr., Jacksonville
Purser, John Palmer, Jr., Jacksonville
Sarven, George W., St. Petersburg
Smith, S. C., Arcadia

GEORGIA

Alexander, James G., Atlanta
Auld, Don, Savannah
Inge, Rease, Atlanta
Little, Betty C., Atlanta
Wilson, Clarence B., Atlanta

ILLINOIS

Burns, Robert, Rock Island
Doty, J. Roy, Chicago
Partridge, Marie B., Chicago
Scharringhausen, George L., Park Ridge
Schneider, John C., Rock Island
Schramm, Arthur R., Highland Park
Sister Rosella Knepler, Springfield
Sladky, Louis F., Chicago
Van Dyke, Robert C., Chicago

INDIANA

Manna, Louis, W. Lafayette

IOWA

Gillman, George W., Fort Dodge
LaMond, Merry, Des Moines

LOUISIANA

Vogt, Eugene W., Ferriday

MAINE

Nadeau, Meril A., Lewiston

MARYLAND

Burgison, Raymond M., Baltimore
Mupsik, Herman M., Baltimore
Sister Barbara Nealen, Baltimore

MASSACHUSETTS

Gosselin, Raymond A., Cambridge
Hailer, Fred C., Boston
King, Standish B., Chicopee Falls
Pierce, Ethel T., N. Abington
St. Louis, Eudore J., Lawrence
Verallis, George D., Springfield

MICHIGAN

Culter, Samuel H., Kalamazoo
Drouillard, Joseph R., Flatrock
Goldstein, Meyer L., Highland Park
Grunow, Olive, Detroit
Lake, Kenneth E., Constantine
Lark, Wendell P., Detroit
Maurina, F. A., Detroit
Rawlins, Albert L., Grosse Pointe Woods
Wruble, Milton, Kalamazoo

MINNESOTA

Deterling, B. A., Granite Falls
Miller, Robert H., Minneapolis
Pederson, Arthur G., Bagley

MISSISSIPPI

Gerache, Joseph J., Vicksburg

MISSOURI

Ameiss, Vincent R., St. Louis
Campbell, Dr. Clarence L., St. Louis
Sister Mary Mercy Dalton, St. Louis
Skinner, Emmett H., St. Louis
Summytt, E. T., St. Louis

NEBRASKA

Powers, L. H., Omaha

NEW HAMPSHIRE

Gosselin, Ida M., Manchester

NEW JERSEY

Kuna, Samuel, Rahway
Pinchak, Seymore F., Paterson
Richards, Josephine C., East Orange

NEW YORK

Antoshkiw, Thomas, Stapleton, S. I.
Garb, John, New York
Margotta, Anna, New Rochelle
Newcomb, E. Allen, New York
Norwesh, Alexander J., Glen Cove
Sister Rose Dominici, Brooklyn

NORTH CAROLINA

Davis, William E., Greensboro

OHIO

Brenner, Emanuel, Cincinnati
Brown, Harold R., Cincinnati
Ciolfi, Agnes S., Cleveland
Cohn, Harry A., Cleveland
Crosby, Justin D., Piqua
Dennis, John F., Toledo
Lewandowski, Zygmund, Toledo
Marquis, Margaret, W. Alexandria
Mihalek, Florence M., Cleveland
Parrine, John J., Rocky River
Ringer, Ralph E., Bryan
Schneeberger, Werner F., Cincinnati

OKLAHOMA

Sigloch, Henry L., Oklahoma City

OREGON

Dann, Martha T., Portland
Ogden, William H., Portland
Smeck, Carroll I., Portland

PENNSYLVANIA

Basilone, Angelo F., Connellsville
Carroll, E. J., Bryn Mawr
Certo, Natalie, Pittsburgh
Cope, L. M., Philadelphia
Costa, William J., Ridley Park
Coyne, Genevieve R., Old Forge
Gubin, Sidney H., Philadelphia
Hammond, Henry L., Phoenixville
Hetzel, C. Roy, Connellsville
Jenkins, Charles N., Wesleyville
Johnson, Leonard B., Smethport
Kealey, J. V., Jeannette
Kramer, James, Philadelphia
Lauter, Aaron M., Linwood
Martin, Ellwood T., Jr., Conshohocken
Maust, Jonas G., Philadelphia
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Mersky, Milton E., Pittsburgh
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Sloane, Aaron B., Upper Darby
Stein, Meyer, Philadelphia
Stern, Joseph, Reading
Washko, Stephen R., Windber
Welsh, Fred S., Ardmore
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TENNESSEE

Holbert, James M., Lookout Mt.

VERMONT

Russell, Hazen J., Lyndonville

(*Continued on Page 444*)

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PRESCRIPTION INFORMATION SERVICE

(Continued from Page 442)

page 519, by A. S. V. Burgen. It has properties somewhat similar to Prostigmin but is only about one-third as active and is extremely toxic. It is our understanding that it is so toxic that as little as 0.01 cc. spilled into the eye may be fatal. To the best of our knowledge it is not available as a drug although it is manufactured by the Monsanto Chemical Co., St. Louis 4, Mo., and the Victor Chemical Co., 141 W. Jackson Blvd., Chicago 4, Ill.

PALUDRIN

What is Paludrin and where can it be obtained?—O. H., Oregon

Paludrin is an antimalarial drug to which the Council on Pharmacy and Chemistry of the American Medical Association has assigned the name Chlorguanide Hydrochloride. According to the 1949 issue of *New and Nonofficial Remedies*, this drug is available from the Abbott Laboratories, Eli Lilly and Co., and the Syntam Laboratories.

NEW A. PH. A. MEMBERS

(Continued from Page 443)

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WASHINGTON

Halverson, Clarence B., Kirkland
Kennedy, Dorothy O., Everett

WEST VIRGINIA

Stevens, J. G., Huntington

WISCONSIN

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Machida, Yutaka, Paia, Maui, T. H.
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Tucker, Glendon E., Anchorage, Alaska
Vere-Lopez, Ana Mercedes, Santurce, Puerto Rico

FOREIGN

Sister St. Jean de la Croix, Levis, P. Q., Canada
Mameli, Efisio, Padova, Italy
Rovers, John, Victoria, B. C., Canada

Members Deceased

Anderson, Arvid R., Milwaukee, Wis., 1948
Cordes, Henry, Denver, Colo., Oct. 8, 1948
Dietz, Jesse C., Brooklyn, Wis., May 11, 1949
Griffith, Morris J., St. Petersburg, Fla., Sept. 1948
Hancock, James E. (a life member), Baltimore, Md., May 29, 1949
Isermann, Samuel, Tucson, Ariz., Feb. 1, 1949
Martin, Lewis E., Chicago, Ill., May 19, 1949
Page, Albion L., New York, N. Y.
Rothwell, Walter (a life member), Hatboro, Pa.
Seiden, John W. (a life member), Lewistown, Mont.

Typical Days

FROM THE SECRETARY'S DIARY FOR MAY

1st A pleasant motor trip to Gainesville with Dr. E. C. Elliott, Dean C. H. Waldon of the University of Montana, the newly appointed Director of Educational Relations of the American Council on Pharmaceutical Education, and Florida Board of Pharmacy Secretary "Dick" Richards, who did the driving. Here the College of Pharmacy of the University of Florida was inspected and found Dean Perry A. Foote and his staff well housed and amply provided with research facilities.

2nd All day visiting the classrooms and laboratories and conferring with President Miller and other university officials and in the evening a delightful dinner with President Miller acting as host. A thorough review of the university's general education program and how it fits into pharmaceutical education revealed conformity to the modern trend of providing more general education as the basis for professional training.

3rd After a morning spent in final discussions on the Florida University campus, a pleasant drive to St. Augustine with Dean Waldon and Mr. Harrell of the Florida Bureau of Professional Relations and then back to Jacksonville in time for the night train to Washington.

7th Yesterday and today reviewing the accumulated correspondence and other matters and spent such time as was possible at the annual meeting of the American Council on Education; also conferring with representatives of the Army on pending legislation which affects the Medical Service Corps personnel.

11th All day in Chicago conferring with N. A. B. P. Secretary Costello and visiting A. M. A. headquarters and the offices of the American Hospital Association. At noon to

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the Chicago Club to meet with other representatives of pharmacy to discuss ways and means of publicizing pharmacy's views on the various proposals for health and sickness insurance. Late in the afternoon on the "Capitol" for the return trip to Washington.

13th Yesterday and today working out plans for the new educational program to be carried out jointly with the National Heart Institute of the Public Health Service and the American Heart Association. Later lengthy conferences with the printers and distributors of the National Formulary. Later a visit from A. S. H. P. President Flack, exchanging views on the program of the Hospital Pharmacy Division and prospective hospital pharmacy institutes.

14th Continuation of conferences with Herbert Flack and various members of the staff, who gathered at the office on this "day off" to catch up with many pending details resulting from Convention activities.

17th Today inspecting Howard University College of Pharmacy with Dr. E. C. Elliott and conferring with Dean Cooper and other executives of the university at luncheon. Later, visiting classrooms, library and other facilities.

18th Much of the day at the telephone with long distance calls predominating and including conversations with Drs. Dunning, Swain and Schaefer, who constitute the Committees on Finance and Personnel. At lunch with Dr. Powers discussing National Formulary affairs and in the afternoon there was much ado on Constitution Avenue as President Dutra of Brazil passed our headquarters in the automobile parade with President Truman on their way from the airport to the White House. The reception of distinguished visitors who come to Washington usually includes a drive along Constitution Avenue with A. PH. A. building the first to be passed in journeying from the shores of the Potomac to the White House or the Capitol. We hope President Truman always points out our building to his distinguished guests as he passes by.

19th A day of staff conferences and much effort to complete the JOURNAL which carries the Convention information.

20th An early morning visit from a fine group of students of the Massachusetts College of Pharmacy, who were enroute to Boston from Detroit, Indianapolis and way stations. It is always a pleasure to greet student bodies from our colleges of pharmacy when they have the opportunity to visit A. PH. A. headquarters.

23rd Now completing some of the preliminaries for the mission to Japan and later conferring with Council Chairman Beal, who had an extra hour to visit with us and review Council business before train time to Pittsburgh.

25th Now working with the staff in anticipation of vacations of key personnel and conferring with representatives of Government departments who are interested in labor problems and personnel.

26th During the day, a surprise visit from President and Mrs. M. J. Fitzsimmons and Secretary Strasburger of the Maryland Pharmaceutical Association, who were on their way to the District of Columbia Pharmaceutical Association's annual session and dinner. In the evening to join the District pharmacists in their anaual dinner at the Shoreham where President Ivor Griffith of the Philadelphia College of Pharmacy and Science was the speaker with the intriguing subject "Live Longer and Like It."

27th This morning a pleasant visit with President Ivor Griffith of the Philadelphia College of Pharmacy and Science, who was on his way back to Philadelphia and who had not seen some of the recent developments in our building. Later in the day bidding farewell to Dr. Eleanor Poland, who leaves the A. PH. A. to join the Social Service Department of the UAW-CIO, now engaged in devising a medical service plan for automobile workers.

28th Early in the morning to Fredericksburg by motor with Harold Darnell for the annual meeting of the Friends of Historical Pharmacy. Among those present were Dean R. Blackwell Smith and Professor Neuroth of the Medical College of Virginia pharmacy faculty; and Secretary Nottingham and President Rook of the Virginia Pharmaceutical Association. The election of officers and directors resulted in the selection of Dean Smith as president for the ensuing year which assures the interest of Virginia pharmacists especially in the Hugh Mercer Apothecary Shop at Fredericksburg, one of the shrines maintained by this organization.

29th A pleasant motor trip to Morgantown, W. Va., arriving in time to address the alumni and graduating class of the College of Pharmacy of the University of West Virginia at their annual dinner, and later to visit with Dean and Mrs. Hayman.

30th Returning to Washington from Morgantown after a visit to the pharmacy conducted by Mary Angotti and Anne Di Nardi in the university city. Here are two live wires who are a great credit to their alma mater and to the profession.

NNR

PRODUCTS RECENTLY ACCEPTED BY THE A. M. A. COUNCIL ON PHARMACY AND CHEMISTRY

Council descriptions of new drug products only are published regularly in THIS JOURNAL *as they are accepted. Rules upon which the Council bases its action appeared in the July (7:320) 1946 issue, and may be secured in pamphlet form upon request to the Secretary, Council on Pharmacy and Chemistry American Medical Association, 535 N. Dearborn St., Chicago 10, Ill.*

STARCH-DERIVATIVE DUSTING POWDER.—"Bio-Sorb"-Ethicon.—A biologically absorbable powder prepared from cornstarch by etherification with epichlorohydrin. The starch polymer chains are presumably cross-linked by 1,3-diether glycerin group to the extent of not more than 2% of the original starch weight. The starch derivative is mixed with magnesium oxide, 2%, and small residual amounts of sodium sulfate and sodium chloride.

Actions and Uses.—Starch derivative dusting powder is a light dusting powder suitable for use as a lubricant for the hands in donning rubber gloves and for other uses to which talcum powder is ordinarily applicable in general hospital routines. As a substitute for ordinary powdered talc, it has been shown to have the advantage of biologic absorbability and is thus comparatively nonirritating and nontoxic. Its use therefore avoids the known hazards of talcum powder.

Starch derivative dusting powder should be autoclaved for the purpose of sterilization. Slight clumping which occurs after repeated autoclaving may be readily broken up with moderate pressure. Dry wall heat sterilization is not recommended for bacteriologic reasons and should be avoided because of the possible inflammability of the powder. However, even in contact with red-hot cautery, the powder will flash only to about the same degree as cotton, so that this property is not considered to constitute a hazard to its use in surgery.

Dosage.—An amount just sufficient to lubricate the skin or article for which a dusting powder is indicated should be employed in the same manner as for the use of ordinary talc.

Tests and Standards

Starch-derivative dusting powder is an odorless, white powder. The *p*H of a 10% suspension of starch-derivative dusting powder in distilled water is 10.4–10.8.

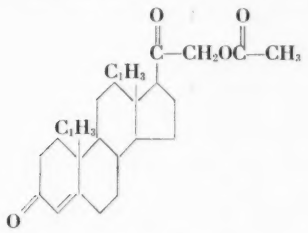
For tests and standards see *J. Am. Med. Assoc.*, **140:** 605 (1949).

Ethicon Suture Labs., Division of Johnson & Johnson, New Brunswick, N. J.

Bio-Sorb (*Powder*): 2.27-Kg. cans.

U. S. trademark pending.

DESOXYCORTICOSTERONE ACETATE-U. S. P.—Doca Acetate-Organon.—17-(β)-[1-keto-2-acetoxyethyl] Δ^4 androstene-3-one. The structural formula may be represented as follows:



For description and standards see the U. S. Pharmacopœia under Desoxycorticosterone Acetate.

Actions and Uses.—Desoxycorticosterone has been isolated from the adrenal cortex in small amounts and is prepared synthetically as the acetate. Desoxycorticosterone acetate is highly selective in its biologic activity. It has no demonstrable direct effect on protein or carbohydrate metabolism in man and little if any in experimental animals. It has no effect on estrogenic or androgenic activity and no effect on pigmentation. Its known activity is limited to that of the metabolism of sodium, potassium, and water and is mediated through its action on the renal mechanism. It causes an increase in retention in the sodium ion and water and an increase in the excretion of potassium, presumably by modification of reabsorption of these substances by the renal tubules. In therapeutic dosages, in patients with adrenal insufficiency, it restores the serum sodium and potassium and the plasma volume to normal levels. It also elevates the blood pressure. Secondary to the increase in blood volume, there results an increase in cardiac output with a decrease in nitrogen retention, increase in the absorption of fat and glucose from the intestine, and increase in strength as well as appetite.

It has been established that desoxycorticosterone acetate, despite its limited range of physiologic activity, is of great value in the management of adrenal insufficiency, both in maintenance and in the treatment of crises. Many patients with chronic adrenal insufficiency are enabled to resume essentially normal activity by the administration of desoxycorticosterone acetate and sodium chloride alone. In patients with recurrent hypoglycemia and in patients with acute adrenal insufficiency, therapy with this synthetic adrenal steroid should be supplemented with adrenal cortical extracts containing other physiologically active steroids.

Dosage.—The dosage of desoxycorticosterone acetate required for maintenance varies from 1 to 7 mg. daily. It is dependent primarily on individual variation and on the amount of sodium salts in the diet; i.e., the higher the salt intake the lower the

requirement of the adrenal steroid. Experience indicates that most patients require about 3 mg. daily when taking 3 to 6 Gm. of sodium chloride in addition to that contained in the normal diet.

In the management of acute adrenal crises, 10 to 15 mg. may be required twice a day for one or two days in conjunction with liberal quantities of whole adrenal cortical extract and with 1 or 2 daily infusions of 1500 cc. of 5% dextrose in isotonic sodium chloride solution. Transfusion of whole blood or plasma may also be indicated to combat shock.

Desoxycorticosterone acetate is insoluble in water and usually administered in oil by subcutaneous or intramuscular injection. After the maintenance dose has been carefully determined, pellets may be implanted subcutaneously to avoid repeated injections. A pellet of 125 mg. is approximately equivalent to a daily injection of about 0.5 mg. Pellets are usually effective for about one year. Symptoms of adrenal insufficiency begin to recur when the pellets are absorbed. Crumbling of pellets may result in increased absorption and evidence of overdosage.

Caution: Significant toxicity results from excessive amounts of desoxycorticosterone acetate. The most frequent signs are edema, pulmonary congestion, cardiac dilatation, and failure. Arterial hypertension develops in about 30% of patients with chronic adrenal insufficiency after treatment for several months or years. This may require a cautious reduction in the dosage of the steroid or salt or both. Occasionally toxicity due to a decrease in serum potassium concentration in the blood is associated with sudden bouts of weakness and characteristic changes in the electrocardiogram.

Organon, Inc., Orange, N. J.

Solution Doca Acetate in Oil: 5 mg. per cc. in peanut oil, 1-cc. ampuls and 10-cc. vials.

U. S. patent 2,312,481; U. S. trademark 372,214.

THE PHARMACISTS' VIEWPOINT

(Continued from Page 409)

macy of Florida. Every thinking pharmacist will surely avail himself of the opportunity to advance himself, as well as his profession, through cooperation with the Bureau. Those of us who have already joined in, are more than pleased with the results so far, and are looking forward to greater accomplishments in the future.

Pharmacists must realize that if we fail in our organized effort to keep our professional heritage, then we may as well give up our hope of survival as a profession, and allow merciless unethical proprietary manufacturers, sundry stores, and governmental medication to take over a profession that is rightfully ours.

MONTHLY DRUG INDEX

Alidase ... 390
Alkaspasmol ... 390
Aniline Dyes ... 433
Aureomycin ... 433
Bio-Sorb ... 447
Chlorophyll Tooth Paste ... 433
Chlorothen ... 390
C. P. H. (Cutter Protein Hydrolysate) ... 390
Desoxycorticosterone Acetate ... 447
Doca Acetate, Solution ... 447
Dusting Powder, Starch Derivative ... 447
Floropryl ... 390
Germicidal Tablets ... 440
Hexobarbital ... 442
Novocell Pellets ... 440
Orthoxine Hydrochloride, Abergic ... 390
Oxidized Cellulose ... 440
Paludrin ... 444
Penicillin Potassium Buffered Tablets ... 440
Penicillin Sodium ... 440
Phenolic Compounds ... 440
Pituitary Gonadotropic Factor ... 390
Potassium Arsenite Solution ... 442
Pyridoxine ... 433
Pyrrolazate, Abergic Tablets ... 392
Quaternary Ammonium Compounds ... 440
Radiol Germicidal Solution Concentrate ... 440
Radioactive Phosphorus ... 433
Rubramin ... 389, 392
Sanford's Disinfecting Solution Formula B ... 440
Sodium Fluoride Paste ... 440
Tetraethyl Pyrophosphate ... 442
Thalinol ... 392
Thenylene Hydrochloride Cream ... 392
Tobene Ointment ... 392
Tolserol ... 433
Tripazine ... 392
Trosinone ... 392
Valochloran ... 392
Vitamin B_{12} ... 433
Vitamin B_{12} Concentrate ... 392
Zinc Chloride Mouth Wash ... 442

ADVERTISING INDEX

Aluminum Penicillin Oral Tablets (Hynson, Westcott & Dunning, Inc.) ... outside back
Caligesic (Sharp & Dohme, Inc.) ... 386
Cholan D-H (Maltbie Chemical Co.) ... 388
Elixir Fergon and Betaplexin (Winthrop-Stearns, Inc.) ... 385
Estinyl (Schering Corp.) ... 387
Hydro-Bilein (Abbott Laboratories) ... inside front
Kaomagma (Wyeth, Inc.) ... 439
Kaopectate (Upjohn Co.) ... 393
Eli Lilly & Co. ... 398
Merck & Co., Inc. ... 396
Metandren Linguets (Ciba Pharmaceutical Products, Inc.) ... inside back
Neo-Cultol (Arlington Chemical Co.) ... 445
Owens-Illinois Glass Co. ... 391
Philadelphia College of Pharmacy and Science ... 441
Pictorial Paper Package Corp. ... 394
Rubramin (E. R. Squibb & Sons, Inc.) ... 389
Siblin (Parke, Davis & Co.) ... 395
Tyrothricin (S. B. Penick & Co.) ... 444
Veratrite and Vertavis (Irwin, Neisler & Co.) ... 397

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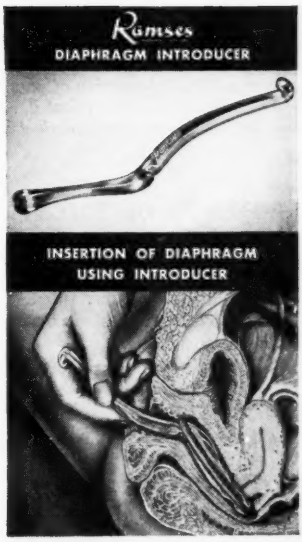

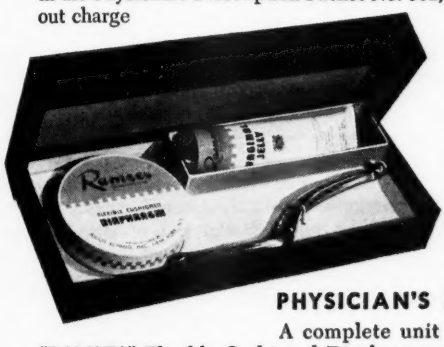

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TRADEMARK REG. U.S. PAT. OFF.

PHYSICIAN'S PRESCRIPTION PACKET NO. 501

A complete unit for conception control. Contains (1) a "RAMSES" Flexible Cushioned Diaphragm of the prescribed size, (2) a "RAMSES" Diaphragm Introducer of corresponding size, and (3) a tube of "RAMSES" Vaginal Jelly† (regular size).

* The word "RAMSES" is a registered trademark of Julius Schmid, Inc.

† Active Ingredients: Dodecaethyleneglycol Monolaurate 5%; Boric Acid 1%; Alcohol 5%.

gynecological division

Julius Schmid, Inc.

423 West 55th Street, New York 19, N. Y.

quality first since 1883

"RAMSES" Vaginal Jelly is accepted by the Council on Pharmacy and Chemistry of the American Medical Association. The "RAMSES" Diaphragm and Diaphragm Introducer are accepted by the Council on Physical Medicine of the American Medical Association.

THIS ADVERTISEMENT IS CURRENTLY APPEARING IN LEADING MEDICAL JOURNALS

New prescription produc

Product descriptions may be clipped and filed on three- by five-inch cards. These are also indexed for qui reference in the "Monthly Drug Index" appearing on the last page of each issue. A product is described this column for the information of pharmacists who may be asked by physicians to stock the drug, or who m receive professional inquiries about it. A listing does not imply evaluation or recommendation by the Assoc tion, nor does omission of any product have significance concerning its merit.

AUREOMYCIN OINTMENT

Description: 3% aureomycin in petrolatum and wool-fat base.

Form Supplied: One-ounce tube.

Action: Application to skin in treatment of superficial infections.

Administration: Apply locally and in severe infections supplement with oral aureomycin.

Source: Lederle Laboratories Division, American Cyanamid Co., Pearl River, N.Y.

AUREOMYCIN TROCHES

Description: Troches containing 15 mg. of aureomycin.

Form Supplied: Bottles of 25 troches.

Action: Antibiotic.

Administration: As directed by the physician.

Source: Lederle Laboratories Division, American Cyanamid Co., Pearl River, N. Y.

BACITRACIN TROCHES

Description: Troches containing 1000 units of bacitracin each.

Form Supplied: Vials containing 25 troches.

Action: Treatment of infections of the tonsils, mouth, and pharynx amenable to bacitracin.

Administration: 8 to 15 troches daily.

Source: C. S. C. Pharmaceuticals, 17 E. 42nd St., New York 17, N. Y.

BERUBIGEN

Description: Sterile aqueous solution of vitamin B_{12} containing 10 micrograms of the vitamin per cc. and preserved with phenol 0.5%.

Form Supplied: 10-cc. vials.

Action: Anemia therapy.

Administration: 10 to 15 micrograms, intravenously, once or twice weekly.

Source: The Upjohn Co., Kalamazoo, Mich.

BEXTRAL—B_{12} Central

Description: Sterile injection containing in ea cc. vitamin B_{12} 1 microgram, thiamine hydrochlori 25 mg., riboflavin 5 mg., nicotinamide 100 m pyridoxine hydrochloride 5 mg., panthenol 5 mg., a *p*-aminobenzoic acid 25 mg.

Form Supplied: 10-cc. multiple-dose vials.

Action: Treatment of anemia and deficiency vitamin B-complex.

Administration: 1 to 2 cc. intravenously daily.

Source: Central Pharmacal Co., Seymour, Ind.

CARMETHOSE

Description: Tablets containing sodium carbo methylcellulose 225 mg. and magnesium oxide 75 m

Form Supplied: Bottles containing 100 tablets.

Action: Antacid demulcent.

Administration: 2 to 4 tablets, 4 to 6 times dail between meals. The tablets are to be taken wi water or milk and not to be chewed.

Source: Ciba Pharmaceutical Products, Inc Summit, N. J.

COGENAT

Description: Tablets containing 0.625 mg. a 1.25 mg. of conjugated estrogens from pregna mare's urine.

Form Supplied: Bottles containing 100 and 1 tablets.

Action: Treatment of estrogen deficiencies.

Administration: 1.25 mg. to 3.75 mg. daily.

Source: National Drug Co., Philadelphia 44, P

ESTRADIOL BENZOATE

Description: Alpha-estradiol benzoate ampu 0.166 mg. (1000 rat units) per cc. and 0.333 m (2000 rat units) per cc.

(*Continued on Page 456*)

Having a wonderful vacation

Wherever your pollen-sensitive patient spends his vacation, TRIMETON* may add to his enjoyment and rest by alleviating his symptoms of pollinosis. TRIMETON is an unusual antihistaminic. Essentially different in chemical composition, it is so potent that only one 25 milligram tablet is usually required to attain the desired relief in fifteen to thirty minutes. Best of all, your patient isn't likely to sleep away his vacation because the small milligram dosage lessens side effects. Your patient will also appreciate that the high potency of TRIMETON also means lower cost of therapy.

Trimeton

Dosage: One 25 mg. tablet one to three times daily.

TRIMETON, brand of prophenpyridamine, 25 mg. tablets, scored, are available in bottles of 100 and 1000.

*TRIMETON trade-mark of Schering Corporation

Schering CORPORATION • BLOOMFIELD, NEW JERSEY
IN CANADA, SCHERING CORPORATION LIMITED, MONTREAL

TRIMETON

SCHERING

NEW PRESCRIPTION PRODUCTS

(Continued from Page 454)

Form Supplied: Boxes of 6 and 25, 1-cc. ampuls; 10-cc. multiple-dose vials.

Action: Prolongation of estrogenic action.

Administration: 1 to 2 injections every 3 to 4 days, followed by lower dosage when initial complaints subside.

Source: Armour Laboratories, 1425 W. 42nd St., Chicago 9, Ill.

GELFOAM TUMOR DIAGNOSIS KIT

Description: Each kit contains 2 Gelfoam biopsy swabs and one 30-cc. bottle of fixative (Formaldehyde Solution, U. S. P., 1 : 10) and mailing carton.

Form Supplied: Single kits as described above.

Action: Facilitation of cancer diagnosis in accessible regions such as skin, mouth, bronchi, lower bowel, cervix, and uterus.

Administration: According to the Gladstone sponge biopsy technique.

Source: The Upjohn Co., Kalamazoo, Mich.

ORANIXON

Description: Compressed tablets containing 250 mg. each and an elixir containing 400 mg. per teaspoonful of 3-ortho-toloxy-1, 2-propanediol.

Form Supplied: Tablets: bottles of 100, 500, and 1000; elixir: 8-oz. and 1-pint bottles.

Action: Treatment of many types of neuromuscular spasm, etc.

Administration: 1 Gm. orally 3 or 4 times daily.

Source: Organon, Inc., Orange, N. J.

PARACIN

Description: Benzyl benzoate, DDT, and ethyl aminobenzoate in liquid and ointment form. Both forms are nongreasy, nonstaining and waterdispersible.

Form Supplied: Liquid in pint bottles; ointment in 2-oz. tubes.

Action: Treatment of scabies and pediculosis.

Administration: A single application left on from 24 to 48 hours is usually adequate for treatment of scabies and pediculosis corporis and pubis; 10 days is advisable in pediculosis capitis to avoid reinfection.

Source: Eaton Laboratories, Norwich, N. Y.

PENICILLIN INHALATOR OUTFIT

Description: An inhalator and 3 threaded capsules containing 100,000 units of Penicillin "G" Sodium.

Form Supplied: Boxes of 6 and 12 capsules.

Action: Treatment of infections of upper and lower respiratory tract susceptible to penicillin.

Administration: 100,000 units 2 or 3 times daily.

Source: Armour Laboratories, 1425 West 42nd St., Chicago 9, Ill.

PENTRYL

Description: Tablets of methapyrilene hydrochloride 50 mg., ephedrine hydrochloride 16 mg., and pentobarbital sodium 16 mg. with and without enteric coating.

Form supplied: Bottles containing 50 and 500 tablets.

Action: Antihistaminic and antiallergic.

Administration: One tablet 3 or 4 times daily.

Source: Maltine Co., Morris Plains, N. J.

PROCAINE PENICILLIN G FORTIFIED

Description: Sesame oil suspension of procaine penicillin G, 300,000 units per cc., potassium penicillin G crystalline 100,000 units per cc. with 2% aluminum stearate.

Form Supplied: 10-cc. multiple-dose vials.

Action: Treatment of infections amenable to penicillin.

Administration: According to the nature of the infection.

Source: Schering Corp., Bloomfield, N. J.

PROCAINE PENICILLIN G IN OIL, for Veterinary use

Description: Procaine penicillin G in oil containing 10,000 units of procaine penicillin G per cc. suspended in peanut oil and containing 3% aluminum monostearate.

Form Supplied: 100-cc. rubber-stoppered vials.

Action: To counteract infections amenable to penicillin in animals.

Administration: To be determined by the veterinarian.

Source: Bristol Laboratories, Syracuse, N. Y.

SULMET SOLUTION (Sulfamethazine Poultry Drinking Water)

Description: 12.5% solution of sulfamethazine.

Form Supplied: 4-, 16-, and 32-oz. and 1-gallon bottles; 5-gallon metal container.

Action: Treatment of poultry diseases amenable to sulfamethazine, i.e., cecal coccidiosis, coryza, pullorum disease, etc.

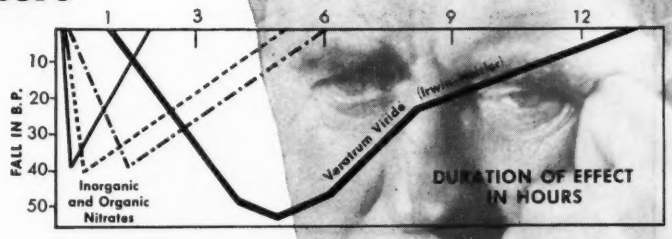
Administration: Administered in drinking water.

Source: Lederle Laboratories Division, American Cyanamid Co., Pearl River, N. Y.

Benzedrex Replaces Benzedrine

A new chemical compound named Benzedrex (1-cyclo hexyl-2-methylaminopropane) will replace Benzedrine (amphetamine) in nasal inhalers, Smith, Kline and French Laboratories have announced. The new inhalers are non-stimulating and, unlike Benzedrine inhalers, are not susceptible to improper use. Other forms of Benzedrine will continue to be sold, as in the past, only on the prescription of a physician, the firm said.

THE DRUG that produces a physiologic fall in blood pressure



veratrum viride in CRAW UNITS*

New hope for the individual with hypertension is assured in recent reports from extensive clinical research:

(1) Veratrum viride (Biologically Standardized in Craw Units) produces the greatest fall in blood pressure in the greatest number of patients.

(2) Veratrum viride in Craw Units produces a fall in blood pressure of far greater duration than any drug previously used.

(3) Veratrum viride in Craw Units, of all the drugs employed today, is the only therapeutic agent which produces a physiologic fall in blood pressure.

Clinical study of this very old drug has been made possible only because a method has now been devised for standardizing veratrum viride by means of CRAW UNITS . . . an Irwin-Neisler research development. In no instance have unstandardized powders, tinctures, fluid extracts or solutions of veratrum viride produced uniform therapeutic effects in hypertension, nor do they have the same pharmacologic action as does the biologically standardized drug in Craw Units. There is, therefore, *no equivalent* between Craw Units and milligrams or grains of unstandardized powdered veratrum viride.

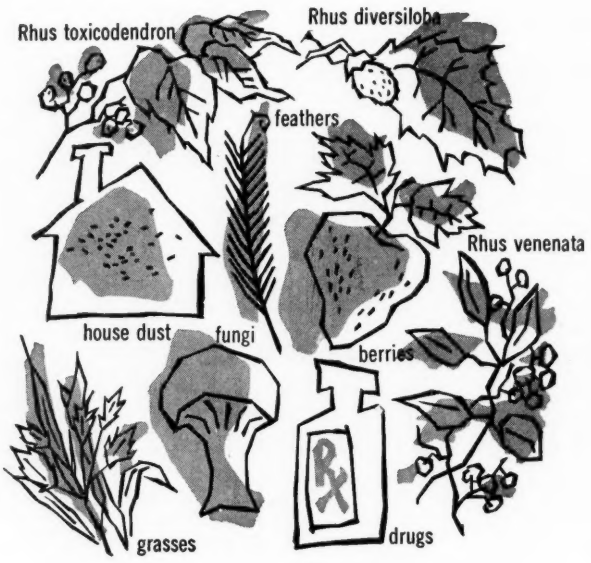
In order to duplicate these striking clinical effects in the treatment of essential hypertension, it is imperative that the physician receive only the Biologically Standardized veratrum viride in Craw Units. Make sure your stocks include adequate supplies of these important Irwin-Neisler specialties:

Vertavis® **Tablets . . . *for severe, resistant essential hypertension.*** A single agent containing whole-powdered veratrum viride, Biologically Standardized. Supplied in 10 Craw Unit or 5 Craw Unit potencies. VERTAVIS® with Phenobarbital is also available.

Veratrite® **Tabules . . . *for mild and moderate essential hypertension.*** An effective combination of veratrum viride 3 Craw Units, sodium nitrite 1 grain, and phenobarbital ¼ grain.

*The CRAW UNIT is the multiple of the amount of veratrum viride which will cause cardiac arrest in the test animal, Daphnia Magna. *Literature on the CRAW UNIT available on request.*

IRWIN, NEISLER & CO. 65 YEAR **DECATUR, ILLINOIS**



ANTIHISTAMINE THERAPY DEVOID OF DISTRESSING BY-EFFECTS

DIATRIN* A SUPERIOR ANTIHISTAMINIC

HYDROCHLORIDE 'WARNER'

Allergic manifestations are year-round occurrences, although certain allergic disorders are seasonal in their incidence. Changes in diet, readjustments from indoor to outdoor life and spring house cleaning with its attendant raising of house dusts are irritating factors of no inconsiderable importance. The arrival of summer brings the rose and grass pollens and the early autumn months are accompanied by heavy weed pollens.

In any allergic disorder in which antihistamine therapy is elected Diatrin* Hydrochloride will be found prompt, effective, and safe in action.

*Diatrin** *Hydrochloride 'Warner' sugar-coated tablets, 50 mg. each, are available in bottles of 100 and 1000.*

*T. M. Reg. U. S. Pat. Off.

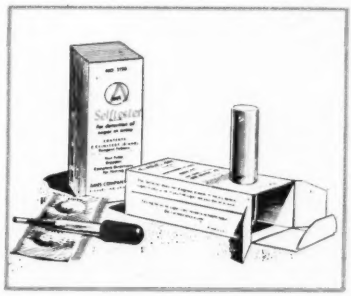
WILLIAM R. WARNER & CO., INC.
NEW YORK ST. LOUIS

YOU can help find the "1,000,000 unknown diabetics"

The drug trade has a special part to play in the great Diabetes Detection Drive. By having available the

AMES *Selftester*

TRADE MARK



a complete urine-sugar detection unit, you enable your customers to test themselves for urine-sugar. The test is easily performed and readily understood. It does not diagnose disease—it does detect sugar. Explicit directions tell those who find sugar in their urine to see their doctor at once.

The Ames ***Selftester*** —approved by the American Diabetes Association and accepted for advertising by the American Medical Association—includes *Clinitest* (Brand) Reagent Tablets. It is an over-the-counter item distributed through regular drug channels.

Ames Selftester (2 tests per package)

Retail Fair Trade Price	**per doz. $4.68**	**ea. $0.39**
Your Cost	**per doz. 2.80**	**ea. 0.23-1/3**
Your Profit	**per doz. $1.88**	**ea. $0.15-2/3**

Order now from your wholesale druggist. An extra 10% discount is allowed on orders for Ames products of $50.00 or more at minimum wholesale fair trade prices. The Drive sponsored by the American Diabetes Association to find "the million unknown diabetics"* will be publicized by radio, newspapers, magazines, car cards and other media. Your active participation will insure the success of this campaign. The Ames ***Selftester*** will be intensively promoted through medical journals, direct mail and national magazines.

*Wilkerson, H. L. C. and Krall, L. P.: Diabetes in a New England Town, JAMA, 135:209 (Sept. 27) 1947.

NATIONAL DIABETES WEEK is October 10-16

The Diabetes Detection Drive of the American Diabetes Association continues as a year-round program.

AMES COMPANY, INC • ELKHART, INDIANA

and NOW

in the Control of Edema

ORAL

Mercurial Diuretic

Tablets MERCUHYDRIN®

with Ascorbic Acid

One to two tablets daily will permit maintenance of patients at optimal or "dry" weight. *Tablets MERCUHYDRIN with Ascorbic Acid* combat the pathologic retention of water-binding sodium which imposes a mounting fluid burden on the failing heart. Effective and usually well-tolerated, they are of special value in treatment of ambulatory patients.

MERCUHYDRIN mobilizes water and sodium from inundated tissues and fosters their urinary excretion. Oral maintenance therapy . . . *Tablets MERCUHYDRIN with Ascorbic Acid* . . . supplements the parenteral mercurial and diminishes the number of injections required to maintain the edema-free state.

Tablets MERCUHYDRIN with Ascorbic Acid: Bottles of 100. Each tablet contains meralluride 60 mg. and ascorbic acid 100 mg.

Lakeside Laboratories, INC.

MILWAUKEE 1, WISCONSIN

For troubles that are skin deep

For skinned knees, knuckles and elbows, for scratches, minor burns, cuts, and in fact for all the varied skin damage of childhood, there's no better antiseptic, dry surgical dressing than B·F·I powder.

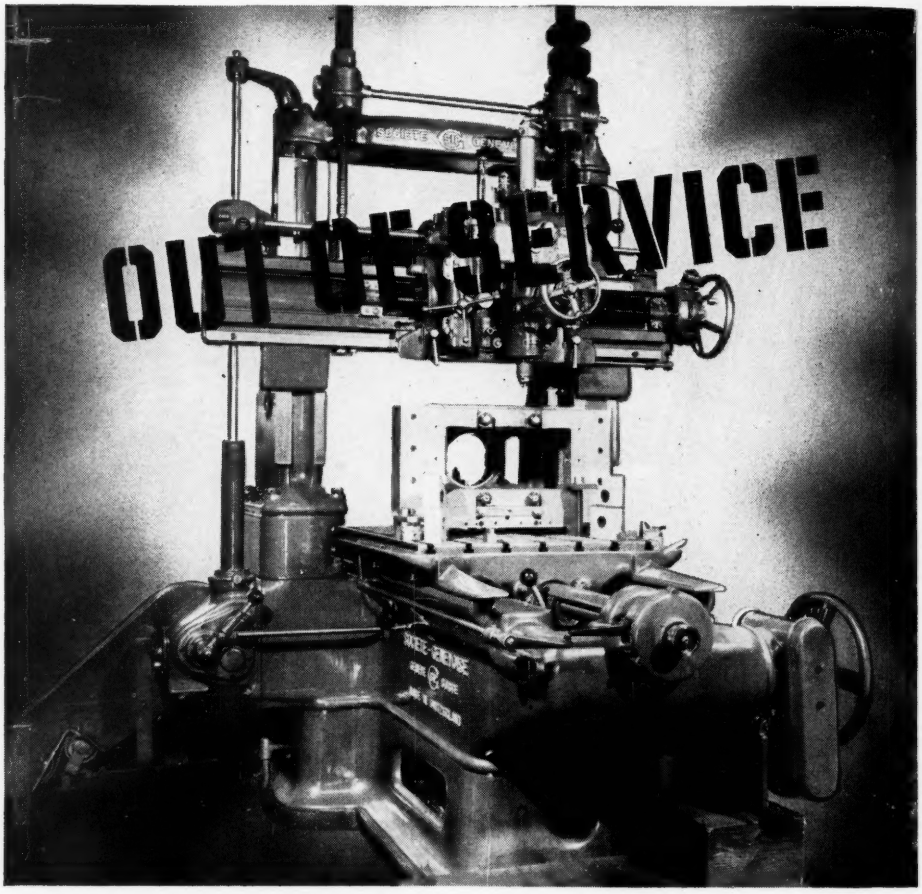
And B·F·I is good for many other skin ailments. Fungus infection of the toes and feet ("athlete's foot") generally yield to soap, water, towel, and dry, astringent, B·F·I powder. It's also used to relieve itching, burning foot fatigue, prickly heat, diaper rash, sunburn, and the messy dermatitis due to poison ivy or poison oak.

B·F·I has a place in medicine cabinets and emergency kits everywhere, *because it works.* It's antiseptic, easy to apply, spreads, clings, absorbs discharges, and promotes healing without forming hard crusts. *Check your stocks now!* B·F·I Antiseptic First-Aid Powder is supplied in attractive sprinkler-top packages: ¼-ounce, 1¼-ounce, and ½-pound. Sharp & Dohme, Phila. 1, Pa.

Antiseptic First-Aid Dressing and Surgical Dusting Powder

B·F·I®

SHARP & DOHME



An *itch* stopped this machine

It might have been the new cutting oil that gave Joe the rash. Maybe the picnic ground last Sunday was dotted with pretty green poison ivy plants. Or maybe Joe is hypersensitive to insect bites.

Joe is home today. He feels as though someone were holding a blowtorch on him. His highly specialized machine will stand idle until the burning, maddening itch is relieved and he can get back on the job.

Dermesthetic Ointment*—CUTTER
—will give triple-action itch relief while the underlying cause is being treated. Three anesthetic agents** offer fast, overlapping, and prolonged topical anesthesia. The base is greaseless and washable, no bandage is required, and normal work routines continue uninterrupted.

Dermesthetic Ointment is available in 1⅛ oz. tubes and 1 lb. jars. Is your stock sufficient to fill prescriptions?

**Fast—BENZYL ALCOHOL
Overlapping — PHENOL
Prolonged—BENZOCAINE

*CUTTER Trade Name

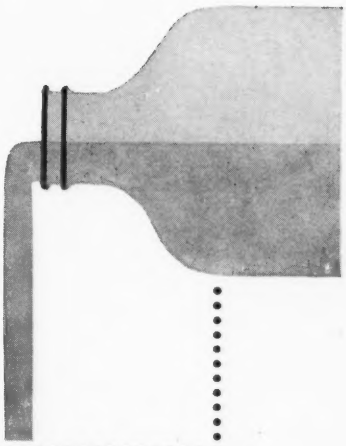
Dermesthetic Ointment—CUTTER

CUTTER LABORATORIES • BERKELEY 10, CALIFORNIA

PATIENTS WILL APPRECIATE THIS

new

truly palatable
highly concentrated
Choline
Preparation



Solution Choline Gluconate-C.S.C. represents a significant advance in choline therapy. Its citrus orange flavor is unusually delightful, making it acceptable even over the prolonged periods required in the treatment of many hepatic disorders. This preparation, which replaces Syrup Choline Bicarbonate-C.S.C., contains 62.5% choline gluconate or the equivalent of 25% choline base, the highest choline content of any choline solution available today. Furthermore, its low cost to the patient in terms of choline content, makes it outstandingly economical.

Solution Choline Gluconate-C.S.C. is indicated in the treatment of all hepatic, precirrhotic, and cirrhotic conditions in which choline is of value. It is best taken diluted with a half glass of water.

Solution Choline Gluconate-C.S.C. is now available at your wholesaler in one pint bottles.

C.S.C. Pharmaceuticals

A DIVISION OF COMMERCIAL SOLVENTS CORPORATION, 17 E. 42ND ST., NEW YORK 17, N. Y.

Solution
CHOLINE GLUCONATE

100 TABLETS
T-851
THEOMINAL®
Each tablet contains phenobarbital (LUMINAL* brand) 32 mg. (½ grain)
WARNING: May be habit forming
Theobromine 0.32 Gm. (5 grains)
CAUTION: To be dispensed only by or on the prescription of a physician.
*Luminal, the trademark of Winthrop-Stearns Inc. (reg. U. S. & Canada), indicates its brand of phenobarbital.
Theominal, trademark reg. U. S. & Canada
TX4
MADE IN U. S. A.
Winthrop-Stearns INC.
NEW YORK 13, N. Y. WINDSOR, ONT.

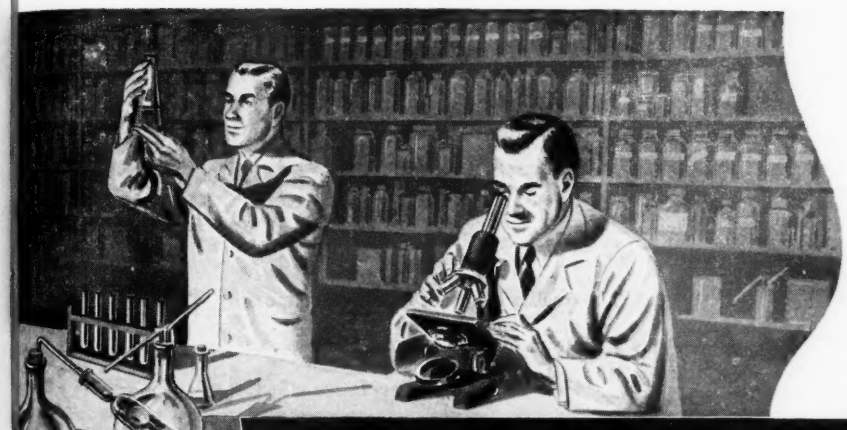
Patients with hypertension for whom **THEOMINAL®** *is prescribed for gradual reduction of blood pressure and gentle sedation must continue such therapy for prolonged periods.*

Make sure you are adequately stocked at all times to meet the continuing demand.

Winthrop-Stearns INC. 170 VARICK STREET, NEW YORK 13, N. Y.

WINTHROP-STEARNS

THEOMINAL, trademark reg. U. S. & Canada



Massengill PRODUCTS

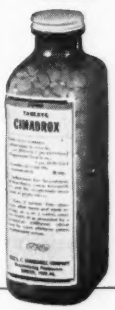
KEEP STEP WITH THERAPEUTIC ADVANCE

CIMADROX is another preparation which illustrates the Massengill policy of keeping abreast of advances in the field of medical therapeutics. In the treatment of peptic ulcer, Cimadrox provides a new and effective approach—in convenient tablet form.

CIMADROX supplies the desirable influence of vitamin C in addition to the established antacid properties of magnesium trisilicate and aluminum hydroxide. Administration of adequate quantities of ascorbic acid, in which ulcer dietaries are frequently deficient, restores the vitamin C blood level and gives further impetus to healing.

CIMADROX, as well as other outstanding Massengill preparations, is intensively promoted, widely prescribed, and extensively used. The profession is kept informed of new Massengill preparations by attention-arresting full page ads in 23 leading medical journals. A large force of detail representatives augments your own sales efforts by effective, frequent personal interviews with physicians.

Supplied in bottles of 1000 tablets



THE S. E. MASSENGILL COMPANY
Bristol, Tenn.-Va.
NEW YORK • SAN FRANCISCO • KANSAS CITY

SEMCO

TABLETS

Cimadrox

FOR MODERN PEPTIC ULCER THERAPY

quality

The quality inherent in Lilly Products
is not an accident or chance occurrence.
In co-operative effort,
more than four hundred scientific specialists
inspect, test, standardize, and assay each product.
Of foremost concern in every manufacturing procedure
is excellence of character.
Nothing short of perfection is permitted to pass.
The physician may prescribe and the pharmacist may dispense
Lilly pharmaceutical and biological products
with the confidence that none finer are obtainable.

Lilly

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